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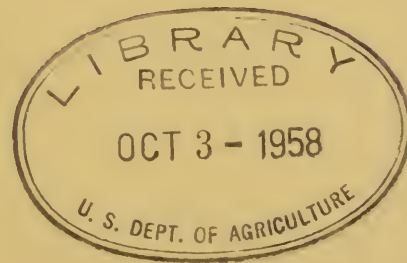


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# RED RIVER BACKWATER AREA (VICKSBURG DISTRICT) LOUISIANA

## MISSISSIPPI RIVER AND TRIBUTARIES PROJECT REVIEW



SOIL CONSERVATION SERVICE  
ALEXANDRIA, LOUISIANA  
October 1957



RED RIVER BACKWATER AREA  
(VICKSBURG DISTRICT)  
LOUISIANA

MISSISSIPPI RIVER AND TRIBUTARIES  
PROJECT REVIEW

REPORT ON  
PRESENT AND ANTICIPATED AGRICULTURAL CONDITIONS

Prepared By The  
U.S. Department of Agriculture for the Mississippi River Commission

Soil Conservation Service  
Alexandria, Louisiana  
October, 1957



## AUTHORITY

This report has been prepared by the Soil Conservation Service, U. S. Department of Agriculture, covering studies made under authority of Sec. 6, P. L. 566, 83rd Congress and upon request of the Mississippi River Commission. The basis for study was agreed upon as set forth in the Project Study Statement dated August 8, 1957.

## AGENCY PARTICIPATION AND RESPONSIBILITIES

This report is based on data at hand and the combined judgment of agricultural technicians most familiar with the project area and its agricultural conditions and problems. Under a U. S. Department of Agriculture memorandum of understanding, consummated February 2, 1956, the U. S. Forest Service, the Agriculture Research Service and the Soil Conservation Service have each participated in the study.

The acreages and intentions of woodland owners, other than farmers, were developed by the U. S. Forest Service. All woodland yields, values and costs were developed by the U. S. Forest Service.

Projected price and cost data for farm crops and livestock enterprises, and interest rates for amortization and discounting were developed by the Agricultural Research Service. They also assisted the Soil Conservation Service in studies of field crop and pasture costs and in overall economic procedures.

The Soil Conservation Service, through the office of the State Conservationist, Louisiana, has been responsible for coordinating and conducting the project studies and preparing this report.

## PRESENT OR EXISTING CONDITIONS

A soil classification survey was made of the entire area and the various soil unit acreages were tabulated by projects, reaches, and zones to be used as a basis or foundation for the entire study.

Yield tables were developed for each project having a different soil production potential. Soil unit yields were for undrained land, drained land, and drained land irrigated for each crop.

Land use and cropping patterns were developed by soil units.

All of the above was then used in preparing tables for present conditions.

## FUTURE CONDITIONS AND NET RETURNS WITHOUT THE PROPOSED PROJECT

Using projected price and cost data supplied by the Agricultural Research Service as a guide, the Soil Conservation Service developed a cropping pattern for the future without the project which would reflect major changes in net income of the various crops grown in the area.

Acreages based on project lines supplied by the Vicksburg District, Corps of Engineers, were reduced by the acreages of dedicated woodland supplied by the U. S. Forest Service, to obtain the potential land for conversion. This acreage was further reduced by acreages of soil units of low income production, and by acreages that would not be converted without the proposed project, based on trends in land conversion in undeveloped or partially developed areas. From the new acreage (present plus future without the proposed project) was then subtracted the acreage that could be drained without the proposed project. Expected participation in drainage with the proposed project was then determined.

The future without project soil unit acreages; the future cropping pattern; weighted yields in proportion to undrained, drained, and drained land irrigated; projected prices; and projected costs were then used in determining the net return for the future without the proposed project. Included in these calculations are future net returns for woodland supplied by the U. S. Forest Service, which were applied to acreages of woodland expected to be converted in the future with the proposed project.

## FUTURE CONDITIONS AND NET RETURNS WITH THE PROPOSED PROJECT IN PLACE

Acreages based on project lines supplied by the Vicksburg District, Corps of Engineers, reduced by acreages of dedicated woodland supplied by the U. S. Forest Service, gave the potential woodland for conversion. This acreage was reduced by that amount occurring on low income producing soils and by estimated lack of farmer participation. This acreage plus the acreage used in future without the proposed project made up the acreage by soil units for future with the proposed project conditions.

Based on project lines supplied by the Vicksburg District, Corps of Engineers, and past experience in farmer participation in drainage and irrigation in developed areas, it was possible to estimate the percent by soil units of land that would remain undrained, that would be drained, and that would be drained and irrigated in the future with the proposed project. (Availability of irrigation water, need for irrigation and trends toward irrigation were important considerations in estimating the acreage expected to be irrigated).

The increased proportion of land drained allows a more diversified cropping pattern under future with project conditions. With long-term projected prices and a free economy,

farmers will tend to adapt their crops to soils in such a manner as to obtain the highest net return. This will indicate a somewhat different cropping pattern than would occur under the future without project conditions.

The future with proposed project soil unit acreages; the future with proposed project cropping pattern; weighted yields in proportion to undrained, drained, and drained land irrigated; projected prices and projected costs were then used in determining the net return for future with the proposed project in place.

The Soil Conservation Service was also responsible for determining the cost of group drainage, farm drainage and land conversions.

#### METHOD OF COMPUTING AGRICULTURAL VALUES CREDITABLE TO PROJECT

For the purpose of this study it was considered that the authorized work was completed and that the individual sub-projects had received maximum development.

The basis for computing agricultural benefits attributable to the proposed sub-projects was the difference between the future net returns without the proposed sub-project and the future net returns with the proposed sub-project.

In the Bushley Creek, the Ouachita-Lafourche, and the Below Sicily Island sub-projects only those portions of zones A and B whose development was dependent upon the proposed project were considered.

In the Tensas-Cocodrie Pumping Plant sub-project the upper limit of effectiveness is the upper limit of the B-1 zone or 47.3' m.s.l. therefore none of the A zone and only a small portion of the B-1 zone entered into the net benefits attributed to the proposed sub-project.

#### LIMITS OF APPLICATION OF ESTIMATES

The estimates cover an appraisal of the agricultural values and costs that can be expected as a result of agricultural drainage in association with installation of the proposed project works. However, the data include no estimates of flood damage reduction, its values or costs, though the land use and cropping estimates reflect the flood protection that would be afforded by the proposed project works. Average flood-free yield estimates have been used throughout the study so that they can be used as a basis for calculation of flood damage reduction by the Corps of Engineers, based upon its own hydrologic studies. The Department of Agriculture, having made no hydrologic studies of its own in the area, has developed estimates on the basis of hydrologic data provided by the Corps of Engineers, including the delineation of limits of project effectiveness, and maximum overflow that

established the conditions for project study. Further studies may result in revised hydrologic data that would require modification of the agricultural data contained herein.

In determining drainage needs under future conditions with proposed project, all soils of such characteristics as to not require drainage have been eliminated from drainage evaluations. Similarly, all soils that could be drained under future without project conditions, have been eliminated.

### DESCRIPTION OF PROJECT

This study considers four sub-projects of the Red River backwater area as follows:

1. Ouachita-Lafourche. The proposed protection works would consist of a loop levee extending from the eastern edge of the city of Monroe, Louisiana, to the west bank of Bayou Lafourche, thence down the west bank of Bayou Lafourche and Boeuf River to the vicinity of Horseshoe Lake, thence looping back up the east bank of Ouachita River to a tie with the terminus of the existing Ouachita River levee. Along the improved channel of Bayou Lafourche, the protection works will be provided by closure of openings in the existing spoil banks. Interior drainage would be provided by construction of an intercepting ditch parallel to the levee along Bayou Lafourche and Boeuf River to a connection with a floodgate in Grassy Lake. A sump would be provided above the Grassy Lake outlet for storage of excess runoff. For the purpose of this study, it is assumed that the existing project on Boeuf-Tensas River and Bayou Macon Project is completed and the area contained has reached the full development resulting from the construction of the project.

2. Bushley Creek. The plan of improvement consists of a levee along the right bank of Ouachita River from Harrisonburg south to Little River, and along the north bank of Little River to the hill line near Rhinehart. Interior drainage would be evacuated through a floodgate in Bushley Creek. A sump would be provided above the Bushley Creek outlet for storage of excess runoff.

3. Below Sicily Island. The proposed plan of improvement would protect an area south of Sicily Island by the construction of a levee extending south from the southwestern edge of the Sicily Island hills along the east bank of Ouachita River, thence up the right bank of Tensas River to a point opposite Sicily Island and a tie to the Sicily Island ridge immediately above the town of Sicily Island. Interior drainage would be evacuated through natural streams improved as necessary to a connection with a floodgate in the southwestern portion of the area. A sump area would be provided in the southwestern portion of the area for storage of excess runoff. For the purpose of this study, it is assumed that the existing project on Boeuf-Tensas River and Bayou Macon

Project is completed and the area contained has reached the full development resulting from the construction of the project.

4. Tensas-Cocodrie Pumping Plant. The Tensas-Cocodrie ring levee is complete and it is assumed that the area contained has reached full development. This study was to determine what additional benefits could be secured by lowering the existing sump by means of a pumping plant. The upper limits of effectiveness of the pumping plant is 47.3' m.s.l. which is the present maximum sump under the existing project. The area between elevation 47.3 and 45.6 m.s.l. (the maximum sump with pumping plant in operation) is designated as Zone B-1, and will receive essentially full protection. The area between elevation 45.6 and 39.5 m.s.l. (the 5-year frequency with pumping plant in operation) is designated as Zone B-2, and will receive partial protection. The area below Zone B-2 is designated as Zone C and will receive no project benefit. No Zone A was studied as it is assumed all benefits in the A-zone would accrue to the existing project.

All above proposed protection works, and the existing Tensas-Cocodrie Ring Levee Area, include an overtopping or fuse plug section to permit storage of backwater in the protected areas when floodwaters exceed the design condition. The frequency of this overtopping is assumed to be not greater than once in the lifetime of the project; therefore, it was assumed for the purpose of this study, that the areas will receive substantially complete protection from backwater flooding.

### SOILS

Because of widely different characteristics the soils of the Red River Backwater Area were divided into three major groups, designated as the BOA problem area, the LT problem area and the BO problem area. These problem areas were then divided into soil units for the purpose of this study.

#### The BOA Problem Area:

Known geographically as the Ouachita Cone, the soils of this problem area are derived from the sediments of the Arkansas, Ouachita, and the Mississippi Rivers, which, with their tributaries, carry sediments eroded from a large part of the United States. The widely differing geologic sources and ages of material carried by these streams cause consequent differences in chemical and physical makeup of their sediments. The alternate flooding by one river or another or all rivers at once, each carrying different sediments together with the shifting of stream channels and consequent reworking of material has given rise to a rather unique conglomeration of soils which differ chemically and physically from soils found along the individual rivers.

The Arkansas River, which was the dominant influence on sedimentation in this area, changed its course many years ago and there has been very little recent deposition except in the

backwater areas; therefore these soils have lost much of their minerals through leaching and are rapidly developing terrace-like profiles.

The sediments from which these soils were formed, the process by which the sediments were deposited, and the geologic age of these soils all tend to make them less fertile than similar soils occurring along the Mississippi, Arkansas, and Red Rivers.

Within the BOA problem area are also several islands which are older geologically and have developed into true terrace. These soils are generally less productive than the better bottom-land soils.

The BOA problem area was divided into the following soil units.

Soil Unit 1a - BOA - Fine textured, very slowly permeable, very poorly drained soils, bottomland.

Soil Unit 1a is very difficult to drain, till, obtain a stand of seedlings on and to irrigate. As the organic matter content lowers, all the above difficulties increase. When protected from overflow, and drained and managed properly, soil unit 1a will grow fair yields of pasture, oats and corn. Without proper management, this soil soon loses organic matter, becomes impervious and less productive, and is often abandoned.

Soil Unit 1 - BOA - Fine textured, very slowly permeable, poorly drained soils, bottomland.

Soil Unit 1 is rather difficult to drain, till, obtain a stand of seedlings on, and to irrigate; and as the organic matter content lowers, all the above difficulties increase. When properly drained and managed, fair to medium yields of pasture and fair yields of corn, oats, cotton, and soybeans may be obtained.

Soil Unit 2 - BOA - Moderately fine textured, somewhat poorly drained soils, bottomlands.

Soil Unit 2 is moderately difficult to drain, till, obtain a stand of seedlings on, and to irrigate; and as the organic matter content lowers, becomes more difficult to handle. When properly drained and managed, however, soil unit 2 can be expected to produce moderate to high yields of pasture, corn, cotton, soybeans, and oats.

Soil Unit 5 - BOA - Medium textured, moderately well, and well drained soils, bottomlands.

Soil Unit 5 is usually rather easy to drain, till, obtain a stand of seedlings on, and to irrigate. When properly drained and managed, these soils produce moderate to high yields for the area but generally require a more complete fertilizer than the heavier soils.

Soil Unit 11 - BOA - Medium and moderately coarse textured, well drained soils, bottomlands and natural levees or low terraces.

Soil Unit 11 in Louisiana is medium textured and requires some drainage, but it is usually easy to drain. This soil is easy to till, to obtain a stand of seedlings on, and to irrigate. Soil Unit 11 usually requires a complete fertilizer but under good management will produce high yields of crops adapted to the area. This soil is usually ideal for irrigation because of its permability, slope and location.

#### The LT Problem Area:

Known locally as Macon Ridge these soils are formed from water deposited loess which has developed into loessial terrace soils. These soils are older geologically than either the BOA bottomlands or the BO bottomlands and thus differ considerably in profile development, mineral content and fertility.

The LT problem area was divided into the following soil units.

Soil Unit 8 - LT - Medium and moderately fine textured, poorly and somewhat poorly drained soils, bottomlands and terraces of tributary streams.

This soil is found in long narrow stream channels chiefly within the loess terraces and is made up mainly of reworked loess sediments.

Where flooding is not a problem, this soil will produce moderate to high yields if drained and properly managed.

Soil Unit 9 - LT - Medium textured, well and moderately well drained soils, loess terraces.

Soil Unit 9 is easy to drain, till, obtain a stand of seedlings on, and to irrigate. Soil Unit 9 is generally low in nitrogen, lime and potash and moderately low in phosphate but with proper fertilization and management can be expected to produce moderately high yields of all crops adapted to the area.

Soil Unit 9 contains small areas of Soil Units 10 and 8.

Soil Unit 10 - LT - Medium textured, poorly and somewhat poorly drained soils with fragipans and claypans, loess terraces.

Soil Unit 10 is moderately difficult to drain, till, obtain a stand of seedlings on, and to irrigate. As the organic matter content becomes lower, all of these difficulties increase. This soil is generally low in nitrogen, lime and phosphorus and moderately low in potash.

With proper drainage and management these soils will produce

moderate yields of pasture, corn, cotton, soybeans, and oats.

Soil Unit 10 includes small areas of soil units 9 and 8.

#### The BO Problem Area:

Soils in this area are very fertile bottomland soils deposited by the Mississippi River and its tributaries in recent time geologically.

The BO problem area was divided into soil units as follows:

Soil Unit 1 - Fine textured, very slowly permeable, poorly drained soils bottomlands.

This soil is very fertile but is difficult to till, drain and to obtain a stand of seedlings on, especially when the organic matter becomes depleted. Nitrogen is generally the only fertilizer required on this soil. When protected from overflow, drained and well managed, this soil will produce moderate to high yields of all crops grown in the area.

Soil Unit 2 - Moderately fine textured, somewhat poorly drained soils, bottomlands.

This is a fertile soil but requires drainage and good management for it to produce high yields of all crops grown in the area. This soil generally requires nitrogen, responds to phosphate and in some cases responds to potassium.

Soil Unit 5 - BO - Medium textured, moderately well and well drained soils, bottomlands.

This is a fertile, productive, easy to till soil and under good management will produce high yields of all crops grown in the area. This soil generally responds to nitrogen, phosphate and potassium.

Soil Unit 11 - BO - Medium and moderately coarse textured, well drained soils, bottomlands.

All the soil unit 11 mapped in Louisiana is medium textured and is fertile, easy to till and productive under good management. This soil generally requires a complete fertilizer.

#### COMPOSITION OF PROJECTS BY PROBLEM AREAS

The Ouachita-Lafourche area consists primarily of soils of the BOA problem area with a small percentage of LT problem area soils found scattered along the eastern boundary of the project. The Bushley Creek area contains about 60 percent soils of the BOA problem area, and 40 percent soils of the LT problem area. Below Sicily Island area contains about 60 percent soils of the BOA problem area, and 40 percent soils of the BO problem area. The Tensas-Cocodrie Pumping Plant area consists entirely of soils of the BO problem area.

## OVERALL LAND USE

The Ouachita-Lafourche Area consists of 79,612 acres of woodland, 500 acres of water and 42,421 acres of open land. Conversion from woodland to pasture and crop use has been slow due to lack of drainage outlets, the frequent overflow hazard, and in some locations poor soils (Soil unit 1a BOA).

The Bushley Creek Area consists of 42,923 acres of woodland and 11,196 acres of open land. Conversion from woodland to pasture and crop use has largely been confined to small ridges of terrace soils where the overflow hazard is not so great. The overflow hazard, lack of drainage outlets and in some locations poor soils (Soil units 1a BOA and 10 LT) has deterred farmers from converting more woodland.

The Below Sicily Island Area consists of 63,830 acres of woodland, 1,605 acres of water and 10,698 acres of open land. Conversion from woodland to pasture and cropland has been slow due to the overflow hazard, lack of drainage outlets and in some locations poor soil (soil unit 1a BOA).

Tensas-Cocodrie Area. The study of the Tensas-Cocodrie pumping plant is confined to that area below elevation 47.3'm.s.l. and is therefore largely woodland. Development has been slow at this elevation due to lack of drainage outlets and backwater. This area consists of 133,593 acres of woodland, 3,308 acres of open land and 5,400 acres of water. The open land is almost entirely in pasture.

## WOODLAND

Woodland use is governed primarily by owner policy, which is affected by accessibility, flood and drainage conditions and available markets for forest products. This picture is complicated by the mineral rights law peculiar to Louisiana, these rights being most easily retained by fee ownership, 16,000 acres, or 8% of the total woodland area studied in Zones A, B-1 and B-2 are reserved in forest cover. In addition to this are large areas in the C zones which are also reserved in forest cover. The managed component of the total of all zones includes ownerships ranging from 30,000 acres to less than 1,000. Larger ownerships are wood-using industry lands, or wisely managed properties held primarily for mineral rights. This also holds true for some small ownerships, while other small ownerships are managed by industrial foresters for the mutual benefit of owner and industry. As a rule, these woodlands are in better than average condition.

Slightly more than one-third of the reserved acreage is in unmanaged tracts held for mineral rights. Any saleable timber is disposed of by clear cutting while grazing is frequently done under lease. This results in a run down forest with high cull volumes, but these lands are still unavailable for conversion to agriculture.

Unreserved tracts generally receive minimum attention. Larger properties held for mineral rights are sometimes available for clearing on a leasing basis. These woods have usually deteriorated to the condition described above. Some owners with larger holdings seek the advice of consultants which results in various degrees of management, though rarely intensive, as marketing assistance is the main service desired. Farm woodlots, as a general rule, are sumps and drainage outlets. They furnish low grade products like fuelwood and fence posts while heavy grazing is the rule. Little management is applied to small ownerships not included in a farm unit, and present condition depends on the time of the last cutting. Some notable exceptions to this are found where medium and small ownerships are being placed under management by industrial foresters. Some of this acreage is not considered reserved, as there is no binding agreement between owner and company. Other small ownerships are cut conservatively although this is not the general rule.

Woodlands in larger blocks tend to be more inaccessible, resulting in lighter fire damage, and better quality second growth and yield. Grazing continues to be a problem due to the open range law and traditional attitude of local residents. Cutting is taking place throughout the area but production is much less than what could be expected under sound management. Based on forest sampling points little or no clearing has occurred in the past several years.

#### WOODLAND MARKETS

All merchantable grades of sawtimber cooperage material and pulpwood find ready markets throughout the project areas. Large and medium sawmills are located in Jonesville, Ferriday, Urania, Tallulah, Sonheimer, Vicksburg, Natchez, Monroe, Holly Ridge, Newellton and Waterproof. Most sawmills buy logs from contractors, as well as harvesting timber from their own lands. Quality veneer plants are found in West Monroe and Vicksburg, while Tallulah and Clayton are centers for box grade veneer manufacture. Tight cooperage plants operate at Monroe and Holly Ridge while slack cooperage finds an outlet at Sonheimer. Specialty products are marketed throughout the area, an example being pecan bat stock shipped to Tallulah and Ferriday. Hardwood pulpwood is trucked or shipped by rail to mills at Bastrop and Natchez.

#### CROPPING PATTERN

Cropping patterns vary with soil units, drainage conditions and by problem areas and, therefore, by projects; however the following is the general cropping pattern for the entire Red River Backwater Area for the various conditions studied.

The present cropping pattern is largely geared to present acreage controls. Cotton is usually grown on the lighter and better drained alluvial soils, unless a farm consists entirely of heavy or medium textured soils. In this case cotton is grown on the most favorable part of the farm from a standpoint of

fertility and drainage. Land that would normally be planted to cotton, but is restricted due to crop controls, is now used for production of soybeans, oats and corn, or for pasture. On heavy alluvial soils pasture is usually dominant followed by soybeans, oats, corn and cotton. On medium textured alluvial soils, cotton is grown extensively, followed by pasture, soybeans, corn and oats. On the loessial soils pasture is the predominant land use, followed by cotton, corn, soybeans and oats for pasture and grain.

The cropping pattern for future without project conditions is based on projected prices and undrained yields assuming that the cropping pattern would largely be determined by the net return of the various crops under predominantly undrained conditions for the entire Red River Backwater area. Under these conditions production of soybeans, oats, corn and beef would be more favorable, and production of cotton less favorable. On the heavier alluvial soils pasture, oats and soybeans would be the dominant crop followed by corn and cotton. On the medium and light textured alluvial soils soybeans, pasture and cotton would be the dominant crop followed by corn and oats. On the loessial soils oats for pasture and grain and soybeans would be the dominant crops followed by pasture, cotton and corn.

The cropping pattern for future with project conditions is based on projected prices and drained land yields and costs, assuming the cropping pattern would largely be determined by the net return of the various crops. Under these conditions, oats for grain and grazing, and soybeans and pasture would be the dominant crop on all alluvial soils followed by corn and cotton. On the loessial soils oats for pasture and grain, and pasture would be the dominant crop followed by corn, soybeans and cotton.

#### YIELDS

Yield tables were developed for each of the three problem areas. These tables are by soil units for each crop and are estimates of yields being attained or expected to be attained by average producers without drainage, with drainage, and with drainage and irrigation. Yields were weighted in proportion to the percentage of land undrained, drained, and drained and irrigated. All yield estimates are for flood-free conditions - yields that would be obtained without damage from flooding.

Woodland yields are based on sampling studies conducted in the area by the U. S. Forest Service. Yields are based on average growth rates applicable to the species, stand sizes and ages found. These yields represent the units of wood products and value that will be attained on the average for the next fifty years under the level of management that can be expected to prevail based on present findings in the area. Board and cubic foot yields are computed in the working papers but for simplicity are shown in Table III as a present worth value per acre.

## IRRIGATION

For all practical purposes supplemental irrigation is used in the Ouachita-Lafourche area, and not in the other three projects of the Red River Backwater Area. In the Ouachita-Lafourche Area, 6,629 in the A zone, 450 acres in the B-1 zone and 20 acres in the B-2 zone are being irrigated at the present time. Based on using 12 acre-inches of water for row crops, the amount of water used annually amounts to about 7,100 acre-feet. This entire water supply comes from the Ouachita River, which maintains a minimum channel depth of six feet for navigation purposes.

For future with project conditions, the amount of irrigation in the A zone would increase to about 8,885 acres, an increase of 2,156 acres over that presently being irrigated. This need can easily be met by using surface supplies of the Ouachita River.

In the B-1 zone, the future with project condition, shows an increase in irrigated land from 450 acres to about 1,240 acres, an increase of 790 acres. In the B-2 zone the increase is from 20 acres irrigated to 173 acres, an increase of 153 acres.

Total future with project requirements would be about 10,298 acre-feet of irrigation water per year, compared with present use of 7,100 acre feet per year.

It is estimated that at least 90 percent, or 9,258 acre-feet of irrigation water would come from the Ouachita River, and the remainder would come from ground water sources. From all available data on surface and ground water supply, these irrigation requirements can easily be met.

Costs of installing and maintaining irrigation systems have been put on an annual basis, and have been included as overhead costs in the cost of production. The actual cost of irrigating the land annually - labor, gasoline, oil, etc. has been included in the cost of production as a pre-harvest cost.

## PRICES

Projected field crop and livestock prices used in this report were developed jointly by the Agricultural Research Service and Agricultural Marketing Service. Projected prices have been used, based on most likely long-range expectations, and estimates of cropping patterns have been influenced by the assumption that such prices will prevail. Projected prices were developed from studies on the prospective conditions of product supplies and requirements. In order to remove the effects of price support programs and in order to reflect the economy of production in competing areas, the projections assume the eventual attainment of a relatively free market for agricultural products.

In evaluating the long-run aspects of deferred land development and improvement projects, the use of the projected prices

makes it unnecessary to restrict the acreage of "control" crops in crop income computations.

Crop acreages shown for future conditions are not compatible with a projection of 1955 prices into the future, however. Neither do they seem to portray attainable goals for restricted crops during the surplus disposal period in the immediate years ahead. Therefore, if current prices were to be used in projection of future project conditions, or for projects where early construction is contemplated, there would appear to be little or no justification for increasing the acreage of surplus or "control" crops over 1955 allotment acreages.

Forest product unit values are based on average 1955 prices, f.o.b. mill yard or railroad siding. These prices are considered to be a realistic price projection for future conditions. All values obtained from the application of 1955 prices have been discounted to present worth on all increments in production and value due to application of high level management and for any time lag in availability of products for harvest.

#### CROP PRODUCTION COSTS

Production costs for all field crop and livestock enterprises were developed from a study of large and small Mississippi River bottomland farms. Since production costs by enterprises are not the same for large farms as for small, these costs were weighted in accordance with the proportionate acreage of large and small farms expected to exist in the project area under future conditions. Production costs, as used for project evaluation purposes, include all operational costs required to attain yield levels indicated in project cost tables (such as allowances for labor, power, machinery, materials and services required to produce and market the product), all farm overhead costs necessary in farm operation (except a charge for land), and an allowance for management expense which includes an estimated amount required for the operator's management and for any employed management personnel.

Land charges were omitted from the cost analysis because net returns to land were being determined for conditions with and without the project. Overhead charges (which include such items as a charge for buildings, upkeep of operational machinery, interest on investment, and insurance) and management charges were allocated to enterprises in proportion to the specified costs of production expended on each crop. Some production costs have been treated as variables with yield levels attained (most harvest costs, fertilizer usage, poisoning, etc.) while other costs have been assumed to be fixed regardless of yield (such as soil preparation, cultivation, and machine-picking cost). Preharvest, harvest, overhead and management costs have been computed separately to derive total crop production costs.

Production costs used for projections are approximately 96 percent of the 1955 level of costs incurred by farmers.

It should be noted that yield-production cost relationships are not the same summary tables (all soils) as for individual soils tables. A small portion of this difference is statistical in nature, and other differences are due to the weighting effect of summaries where both yields and production costs are weighted in proportion to the total acreage and total cost in each soil unit.

Where supplemental irrigation costs are involved, such costs were added to standard cost tables to determine total production costs. These costs consist of preharvest and overhead charges. They have already been added to the costs shown in all project tables in proportion to acres irrigated (supplemental irrigation only).

Production costs for forest products are based on costs prevailing in and adjacent to the locality during 1955. These costs are estimated to be at a reasonable level for projection to future conditions. Costs cover conversion of standing timber to raw wood products at mill or rail siding, including a return to management; a cultural and crop management cost consisting of an amortized annual charge for timber stand improvement work; an allowance for management and supervision by owners, their representatives and foresters; and forest protection costs. Conversion costs per acre have been discounted to present worth in the same manner as production values.

#### NET CROP PRODUCTION RETURNS

The analysis of crop production by soil units, upon which the summary tables are based, generally indicate the gross value of production to be greater than production costs. However, production costs of a few crops on some of the soil units are higher than gross value of the crop. A correction has been made in the summary tables to remove the effect of these negative net returns where they occur. In making the correction, the actual returns for the negative net returns were assumed to be zero. In the long-run, shifts in land use may be expected that would largely avoid the losses incurred with the cropping system shown. By indicating a net income of zero for crops having a negative net return, the net error involved is negligible, and well within the limits of error in basic information used in project area analysis. Higher yields, as expected, show larger net returns to land than lower yields for the same enterprise.

The basic principle involved in this analysis is that project justification should not be dependent upon negative values and, therefore, that the total net returns shown for future project conditions places a ceiling on project benefits. Inasmuch as this analysis assumes flood-free yields consideration has not been given to the effect of flood damage on average annual net income.

## LAND USE CONVERSIONS AND COSTS

Tables VI show the conversions that are anticipated from the influence of the various projects and the development of the associated group and farm drainage systems. Tables VI also show the cost of making these conversions at present prices. A rather large number of acres are expected to be converted from woodland to cultivated crops and pasture with the provision of major drainage outlets and associated group and farm drainage systems.

It is estimated that these conversions will all be profitable enough to be desirable from the standpoint of the owner and operator. If the operator secures the inducement of a reasonable income over and above his loss of present woodland value and his land use conversion and drainage costs, he will probably go ahead with land conversions rather than wait for a long period of years for deferred woodland income.

Items of conversion costs include all expense of putting land from its present state into condition to produce a crop or livestock enterprise, with only normal production costs remaining to be incurred.

All capital costs of conversion have been amortized at 5 percent for a period of 50 years. Except for pasture maintenance, included as an annual conversion cost for "new" pasture acreage and improved pasture acreage, all other maintenance is included as part of crop production costs. In the case of the Tensas Coudrie Pumping Plant project pasture costs and pasture maintenance were included as part of crop production costs.

## FARM DRAINAGE SYSTEM AND COSTS

Table VII contains estimates of amounts and costs of farm drainage systems that can be expected after the major outlets have been satisfactorily improved. Approximately 10 percent of the wet land has been taken out for farmsteads, roads, waste, etc., and thus is not available for crop use. An estimated 65 percent of the remaining wet land is to be drained for crop production with the project. The balance or 25 percent has been drained, or will be drained without the project, or will not be improved because of lack of farmer participation.

Cost estimates were based on all ditching and structural needs for systems to serve an average of one square mile. Computed at 1955 levels, they include the installation (construction, engineering, and contingency) costs required for farm drainage systems for satisfactory removal of surface water accumulations that are likely to occur for the various conditions of rainfall and run-off involved. Requirements vary by soil mapping units and by land use. Estimates are based on standard design data for conditions involved.

Farm drainage system capital costs have been amortized for a useful life period of 10 years at 5 percent for all projects.

Field experience in farm drainage work indicates that a 10 year life period is realistic in view of changing ownership, and changes in cropping patterns.

Annual maintenance costs of farm drainage systems, varying with soil mapping units and land use, have been added to the annual equivalent of installation costs to derive the total annual costs of farm drainage.

#### GROUP DRAINAGE SYSTEMS AND COSTS

The Louisiana Department of Public Works has provided a large portion of the Red River Backwater area with parish-wide system of group intermediate drainage ditches using the major streams as outlets. These ditches did not always provide adequate drainage for the entire drainage area of the parish. For instance, in Concordia Parish, the present system of public works ditches provides drainage for only 60 percent of the parish. The remaining 40 percent was mostly in a sump area that did not require drainage at the time of construction.

Investigations indicated that existing Department of Public Works ditches and the existing natural drains would be adequate in the Ouachita-Lafourche and Below Sicily Island areas if the proposed Corps of Engineers borrow pit ditches were constructed. In the Bushley Creek area, and the Tensas-Cocodrie Pumping Plant area, however, the present system of Public Works ditches is not adequate to handle the additional farm drainage that might be expected to be installed as a result of the proposed project.

The Louisiana Department of Public Works furnished an estimate of the cost of intermediate ditches needed in the Bushley Creek area. These costs are shown in Table VIII for Bushley Creek.

In the Tensas-Cocodrie Pumping Plant area, the present 5-year frequency sump will be reduced from the present 45.0' elevation to the 39.5' elevation, m.s.l., bringing in some additional 56,000 acres of land that would require intermediate drainage outlets. The present system of public works ditches in Concordia Parish consists of 226.9 miles of ditches and was installed at a cost of \$553,765. The Parish of Concordia furnished 60 percent of the construction cost and the Louisiana Department of Public Works furnished 40 percent. It is estimated that some 21 additional miles of intermediate ditches will be needed to adequately serve the area being brought in production as a result of lowering the 5-year frequency sump. Estimates of costs are shown in Table VIII for the Tensas-Cocodrie Pumping Plant.

The installation costs of the new intermediate ditches and appurtenant works have been amortized over a 20-year period at  $3\frac{1}{2}$  percent interest to obtain an annual equivalent installation cost. Maintenance costs have been added to this amount to obtain the total annual cost of the needed intermediate ditches.

## BENEFITS AND ASSOCIATED COSTS

Table IX for each reach summarizes net annual returns for tables III and IV for zones A and B; annual costs of making land conversions; (from table VI); and annual costs for establishing farm and group drainage systems (from tables VII and VIII).

Returns and gross benefits, and associated annual costs of land conversions and farm drainage systems in the Ouachita-Lafourche Ring Levee and the Sicily Island Loop Levee sub-project have been discounted at 5 percent in column 3, table IX to account for an estimated 10-year lag and build-up period to full installation and maintenance requirements, and benefits accrual. The ten year period of lag was selected because of the rapid rate at which farmers are presently taking advantage of existing drainage facilities. Consideration was also given to the rate at which technical assistance could be furnished farmers for installing farm drainage systems.

Returns and gross benefits, and associated annual costs of land conversions and farm drainage systems for the Tensas-Cocodrie Pumping Plant Area have been discounted at 5 percent in column 3, table IX to account for an estimated 20-year lag and build-up period to full installation and maintenance requirements and benefit accrual. Group drainage annual cost for the Tensas-Cocodrie Pumping Plant area were discounted at  $3\frac{1}{2}$  percent for a 20-year lag period. The 20-year period of lag was selected to allow for some change in ownership and additional time due to the large amount of conversion.

Group drainage and annual cost for the Bushley Creek Levee Area were discounted at  $3\frac{1}{2}$  percent to account for an estimated 10-year lag in installation. There would be an additional 10-year lag for full installation, maintenance, and benefit accrual for farm drainage systems in this reach. Therefore all farm drainage and conversion annual costs and benefits were discounted for a 20-year period at 5 percent in table IX.

### DETERMINATION OF DEGREE OF DEVELOPMENT DUE TO THE PROPOSED PROJECT

For the purpose of this study, it was considered that the authorized project for the Mississippi River west bank levee and the Tensas-Cocodrie Backwater protection levee were completed. The Old River closure structure will be operated so as not to materially change the frequency or height of backwater as now experienced; and for the Tensas-Cocodrie area study, it was assumed that the protected area has received its maximum development. Each area was studied independently.

In the Ouachita-Lafourche area, the Bushley Creek area, and the Sicily Island area all authorized work was considered complete and assumed to be fully effective. Only those portions of the A, B-1 and B-2 zones whose development was dependent on the proposed project were considered. Therefore, all net benefits resulting were attributed to the proposed project.

In the Tensas-Cocodrie Pumping Plant sub-project, the upper limit of effectiveness is the upper limit of the B-1 zone, therefore, none of the A zone was considered. The B-1 zone was considered primarily independent of the proposed project but required the facilities and impetus of the proposed project for full development to take place. Therefore, 20 percent of the net benefits of the B-1 zone were attributed to the proposed project. All the B-2 zone benefits were attributed to the proposed project.

SUMMARY TABLE

Reaches	Gross Benefits	Discounted Gross Benefits	Discounted Associated Costs	Discounted Net Benefits Due to Project	Percent Net Benefits Due to Project	Amount of Benefits Due to Project
Ouachita Lafourche Ring Levee	333,391	264,296	91,395	172,901	100%	172,901
Bushley Creek Levee Area	144,021	89,476	42,231	47,245	100%	47,245
Sicily Island Loop Levee	482,944	382,854	96,649	286,205	100%	286,205
Tensas Cocodrie Pumping Plant						
Zone B-1	467,636	290,528	80,061	210,467	20%	
Zone B-2	939,932	583,952	176,560	407,392	100%	449,485 1/
Total Red River Backwater Area	2,367,924	1,611,106	486,896	1,124,210		955,836

1/ Consists of 20% of the net benefits of the B-1 zone plus 100% of net benefits of B-2 Zone.



Basin: Red River Backwater Area

Reach: 1

Project: Ouachita (Lafourche  
Ring Levee)

State: Louisiana

TABLE I  
PRESENT LAND USE

Zone	Soil map- ping unit	Open (Acres)	Wooded (Acres)	Urban (Acres)	Total (Acres)
Zone A	1 1/	2,759	5,688	-	8,447
	1a	1,193	4,826	-	6,019
	1U 1/	38	64	-	102
	2	926	75	-	1,001
	5 2/	9,801	113	-	9,914
	5U 2/	19	-	-	19
	9SU	553	125	-	678
	10	2,336	1,647	-	3,983
	10U	248	331	-	579
	10SU	360	175	-	535
	11	9,044	13	-	9,057
	Subtotal-all soils	27,277	13,057	-	40,334
Urban		-	-	0	0
Total Zone A		27,277	13,057	0	40,334
Zone B 1	1 1/	2,457	2,775	-	5,232
	1a	478	5,536	-	6,014
	2	791	274	-	1,065
	5 2/	5,466	1,105	-	6,571
	5U 2/	356	591	-	947
	9SU	281	25	-	306
	10	1,262	213	-	1,475
	10SU	44	25	-	69
	11	954	-	-	954
	Subtotal-all soils	12,089	10,544	-	22,633
Urban		-	-	0	0
Total Zone B 1		12,089	10,544	0	22,633
Zone B 2	1 1/	527	4,654	-	5,181
	1a	442	21,528	-	21,970
	1U 1/	-	159	-	159
	2	301	1,217	-	1,518
	5 2/	861	1,037	-	1,898
	5U 2/	51	172	-	223
	9SU	88	44	-	132
	10	573	181	-	754
	10U	70	-	-	70

Basin: Red River Backwater Area  
 Reach: I  
 Project: Ouachita (Lafourche  
           Ring Levee)  
 State: Louisiana

TABLE I  
 PRESENT LAND USE

Zone	Soil map- ping unit	Open	Wooded	Urban	Total
		(Acres)	(Acres)	(Acres)	(Acres)
Zone B 2 (Con't.)					
	Subtotal-all soils	2,913	28,992	-	31,905
	Urban	-	-	0	0
	Total Zone B 2	2,913	28,992	0	31,905
Zone C					
	1 <u>1/</u>	38	3,901	-	3,901
	1a	38	20,839	-	20,877
	2	14	1,194	-	1,208
	5 <u>2/</u>	38	1,041	-	1,079
	5U <u>2/</u>	38	324	-	362
	10	14	96	-	110
	11	-	124	-	124
	Subtotal-all soils	142	27,519	-	27,661
	Urban	-	-	0	0
	Total Zone C	142	4/27,519	0	27,661
Reach Total-all soils					
	Urban	-	-	0	0
GRAND TOTAL - Project					
		42,421	80,112	0	122,533

1/ Soil unit 1 and 1U combined as 1 on Table 1 A and 1 B.

2/ Soil unit 5 and 5U combined as 5 on Table 1 A and 1 B.

3/ Zone A open land includes 246 acres of water.

4/ Zone C woodland includes 500 acres of water.

Basin: Red River Backwater Area  
Project: Ouachita Lafourche  
Ring Levee  
Reach: 1  
State: Louisiana

SUMMARY - TABLE II A  
(Zone for Drainage Calculations Only)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres 3/	(5) Production		(6) Total
			(4) Unit	per acre	
All	Open Land <u>5/</u>	12,716		<u>4/</u>	
	Crops:	11,444			
	Cotton	3,340	lbs.	293	978,950
	Corn	1,460	bu.	26	38,150
	Soybeans	585	bu.	17	10,120
	Oats(Grain)	1,182	bu.	29	34,678
	Oats(Sup.Past.)	(580)	lbs.beef	177	102,400
	Soybeans(Fol- lowing Oats)	(120)	bu.	13	1,560
	Perm. Pasture	4,462	lbs.beef	174	776,960
	Idle	415			
	Other <u>2/</u>	1,272			
	Woodland	13,057			
	TOTAL <u>1/</u>	25,773			

- 1/ Total does not include 10,041 acres already drained, and  
4,520 acres not needing drainage.  
2/ Farmsteads, farm roads, waste and non-agricultural.  
3/ Parenthetical amounts are duplicated acreages.  
4/ Calculated from columns 3 and 6; rounded to nearest unit.  
5/ 246 acres of water included in open land.

Basin: Red River Backwater Area

Reach: 1

Project: Ouachita (Lafourche

Ring Levee)

State: Louisiana

SUMMARY - TABLE III A

(Zone for Drainage Calculations Only)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres 4/	(4)		(5) Production		(6)		(7) Value of production		(9) Cost of production		(11) Net return Dollars
			Unit	Per acre	Total	Per unit Dollars	Total Dollars	Per acre Dollars	Total Dollars	Per unit Dollars	Total Dollars	Per unit Dollars	
All	Open Land	3,980											
	Crops	3,532											
	Cotton	33	lbs.	209	6,900	0.30445	2,101	70.85	2,338				0
	Corn	318	bu.	22	6,848	1.50	10,272	23.56	7,491				2,871
	Soybeans	275	bu.	13	3,545	2.50	8,863	19.90	5,473				3,390
	Oats (Grain)	485	bu.	20	9,670	.95	9,187	16.96	8,228				1,127
	Oats (Sup. Pas.)	(200)	lbs. beef	134	26,750	0.184	4,922	12.23	2,446				2,476
	Soybeans (Foll- owing Oats)	(40)	bu.	9	360	2.50	900	16.40	656				244
	Perm. Pasture	2,307	lbs. beef	140	323,550	0.184	59,533	12.93	29,827				29,706
	Idle	164											
	Other	398											
	Woodland	3,876					19,923	3.52	13,644				6,279
	TOTAL	7,856					115,701		70,103				46,093

- 1/ Total does not include 10,041 acres already drained; 8,530 acres expected to be drained; future with-  
out project, 2,525 acres open land not expected to participate in drainage program; 6,862 acres to remain  
in woodland, and 4,520 acres not needing drainage.
- 2/ Adjusted to eliminate negative net returns of \$237 Cotton; \$90 Corn & \$168 for Oats (Grain.)
- 3/ Farmsteads, farm roads, waste and non-agricultural.
- 4/ Parenthetical amounts are duplicated acreages.
- 5/ Calculated from columns 3 and 6; rounded to nearest unit.
- 6/ Calculated from columns 3 and 10; rounded to nearest cent.

Basin: Red River Backwater Area  
 Reach: 1  
 Project: Ouachita Lafourche  
Ring Levee  
 State: Louisiana

SUMMARY - TABLE IV A  
 (Zone for Drainage Calculations Only)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
 AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on Projected prices)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres 3/	(4) Production		(6) Total		(7) Value of production		(9) Cost of production		(11) Net return Dollars
			Unit	Per acre	Per unit	Total	Per unit	Total	Per acre	Total	
ALL	Open Land	7,856									
	Crops	7,071									
	Cotton	50	lbs.	382		19,100		5,815	106.44	5,322	493
	Corn	975	bu.	42		41,260	1.50	61,890	40.51	39,496	22,394
	Soybeans	835	bu.	22		18,325	2.50	45,813	27.22	22,730	23,083
	Oats (Grain)	1,810	bu.	38		69,450	.95	65,978	26.16	47,346	18,632
	Oats (Sup.Pas.)	(1,225)	lbs.beef	196		240,550	0.184	44,261	18.94	23,197	21,064
	Soybeans (Foll- owing Oats)	(465)	bu.	18		8,215	2.50	20,538	24.04	11,178	9,360
	Perm. Pasture	3,327	lbs.beef	245		813,950	0.184	149,766	23.22	77,247	72,519
	Idle	74									
	Other	785									
	Woodland	0									
	TOTAL	7,856						394,061		226,516	167,545

1/ Total does not include 10,041 acres a already drained, 8,530 acres expected to be drained; future without project, 2,525 acre open land not expected to participate in drainage program, 6,862 acres to remain in woodland, and 4,520 acres not needing dra inage.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 3 and 6; rounded to nearest unit.

5/ Calculated from columns 3 and 10; rounded to nearest cent.

Basin: Red River Backwater Area

Project: Ouachita Lafourche

Ring Levee

Reach: 1

State: Louisiana

SUMMARY - TABLE II B-1  
(Zone for Drainage and Flood Control Calculations)  
COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4)      (5)      (6) Production		
			Unit	Per acre	Total
All	Open Land	12,089		<u>4/</u>	
	Crops	10,880			
	Cotton	1,775	lbs.	333	590,400
	Corn	1,335	bu.	31	41,080
	Soybeans	645	bu.	19	12,070
	Oats (Grain)	1,421	bu.	32	45,280
	Oats (Sup.Pas) <u>3/</u>	(265)	lbs.beef	149	39,550
	Soybeans (Follow- ing oats)	(115)	bu.	11	1,210
	Perm. Pasture	5,293	lbs.beef	192	1,015,500
	Idle	411			
	Other <u>2/</u>	1,209			
	Woodland	9,176			
	<del>#</del> TOTAL <u>1/</u>	21,265			

1/ Does not include 1,368 acres dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 3 and 6; rounded to nearest unit.

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
 Ring Levee  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE III B-1  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
 AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4) Unit	(5) Production Per acre	(6) Total	(7) Value of production Per unit	(8) Total Dollars	(9) Cost of production Per acre	(10) Total Dollars	(11) Net Return Dollars
ALL	Open Land	13,571		5/						
	Crops: 7/ 8/	12,212								
	Cotton	1,481	lbs.	506	749,240	Lint+Seed 30445	228,106	137.55	196,312	32,558 2/
	Corn	1,434	bu.	38	54,430	1.50	81,645	33.75	48,393	33,252
	Soybeans	872	bu.	23	19,828	2.50	49,570	27.50	23,981	25,589
	Oats (Grain)	1,692	bu.	38	65,044	.95	61,792	26.20	44,327	17,465
	Oats (Sup. Past.)	(715)	lbs. beef	218	155,800	0.184	28,668	20.56	14,703	13,965
	Soybeans (Fol- lowing Oats)	(230)	bu.	21	4,850	2.50	12,125	26.50	6,096	6,029
	Perm. Pasture	6,343	lbs. beef	227	1,437,160	0.184	264,439	22.13	134,007	130,432
	Idle	390								
	Other 3/	1,359								
	Woodland	2,920				5.14	15,010	3.52	10,279	4,731
	TOTAL 1/	16,491					741,355		478,098	264,021

- 1/ Total does not include 4,774 acres to remain in woodland; 1,368 acres dedicated woodland.
- 2/ Adjusted to eliminate negative net returns of \$764 for cotton.
- 3/ Farmsteads, farm roads, waste and non-agricultural.
- 4/ Parenthetical amounts are duplicated acreages.
- 5/ Calculated from columns 3 and 6; rounded to nearest unit.
- 6/ Calculated from columns 3 and 10; rounded to nearest cent.
- 7/ DRAINED: Cotton 67%; Corn 60%; Soybeans 62%; Oats (gr.) 62%; Oats (Sup. Past.) 69%; Soybeans (Fol. Oats) 64%; Perm. Pasture 56%.
- 8/ IRRIGATED (Drained): Cotton 18%; Corn 5%.

Basin: Red River Backwater Area

Project: Ouachita Lafourche

Ring Levee

Reach: 1

State: Louisiana

SUMMARY - TABLE IV B-1

(Zone for Drainage and Flood Control Calculations)  
COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Soil Unit	Land use and crop distribution	Acres	Production Unit	Per Acre	Total	Value of production Per Unit	Total	Cost of production Per Acre	Total	Net Return
ALL	Open Land	16,491		4				5		
	CROPS: 6/ 7/	14,842								
	Cotton	1,285	lbs.	613	787,300	Lint+Seed Dollars 30445	239,694	159.09	204,435	35,259
	Corn	2,035	bu.	47	95,110	1.50	142,665	42.28	86,034	56,631
	Soybeans	2,455	bu.	22	55,125	2.50	137,813	27.51	67,529	70,284
	Oats (Grain)	4,095	bu.	42	172,330	.95	163,714	28.04	114,827	48,887
	Oats (Sup. Past.)	(2,907)	lbs. beef	220	639,580	0.184	117,683	20.92	60,828	56,855
	Soybeans (Fol. -									
	lowing Oats)	(1,140)	bu.	21	24,010	2.50	60,026	26.36	30,047	29,979
	Perm. Pasture	4,934	lbs. beef	258	1,275,408	0.184	234,677	24.27	119,763	114,914
	Idle	38								
	Other 2/	1,649								
	WOODLAND	0								
	TOTAL 1/	16,491					1,096,272		683,463	412,809

- 1/ Total does not include 4,774 acres to remain in woodland and 1,368 acres dedicated woodland.
- 2/ Farmsteads, farm roads, waste and non-agricultural.
- 3/ Parenthetical amounts are duplicated acreages.
- 4/ Calculated from columns 3 and 6; rounded to nearest unit.
- 5/ Calculated from columns 3 and 10; rounded to nearest cent.
- 6/ DRAINED: Cotton 42%; Corn 61%; Soybeans 85%; Oats (gr.) 89%; Oats (Sup. Past.) 89%; Soybeans (Fol. Oats) 89%; Perm. Pasture 88%.
- 7/ IRRIGATED (Drained): Cotton 53%; Corn 27%.

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche  
Ring Levee  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE II B-2  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(5) Production		(6) Total
			(4) Unit	Per acre	
All	Open Land	2,913		<u>4/</u>	
	Crops	2,622			
	Cotton	244	lbs.	269	65,560
	Corn	355	bu.	22	7,980
	Soybeans	60	bu.	21	1,230
	Oats (Grain)	454	bu.	24	11,054
	Oats (Sup.Pas) <u>3/</u>	(32)	lbs.beef	211	6,750
	Perm. Pasture	1,391	lbs.beef	176	244,370
	Idle	118			
	Other <u>2/</u>	291			
	Woodland	22,656			
	TOTAL <u>1/</u>	25,569			

- 1/ Does not include 6,336 acres dedicated woodland.  
2/ Farmsteads, farm roads, waste and non-agricultural.  
3/ Parenthetical amounts are duplicated acreages.  
4/ Calculated from columns 3 and 6; rounded to nearest unit.

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche

SUMMARY - TABLE III B-2

(Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
 AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)  
 Reach: 1  
 State: Louisiana

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4) Unit	(5) Production Per acre	(6) Total	(7) Value of production Per unit	(8) Total	(9) Cost of production Per acre	(10) Total	(11) Net Return
All	Open Land	3,469		4/						
	CROPS: <u>7/ 8/</u>	3,123								
	Cotton	265	lbs.	260	68,950	<u>Lint+Seed</u> .30445	20,993	82.38	21,831	803 6/
	Corn	401	bu.	25	10,146	1.50	15,219	26.09	10,463	4,896 5/
	Soybeans	110	bu.	21	2,300	2.50	5,750	26.87	2,956	2,794
	Oats (Grain)	435	bu.	27	11,946	.95	11,349	20.64	8,979	2,370
	Oats (Sup. Past.)	(171)	lbs. beef	165	28,150	0.184	5,179	15.50	2,650	2,529
	Soybeans Fol- lowing Oats	(50)	bu.	13	630	2.50	1,575	19.64	982	593
	Perm. Pasture	1,792	lbs. beef	175	313,220	0.184	57,633	16.52	29,599	28,034
	Idle	120								
Other <u>2/</u> WOODLAND	2,315					5.14	11,898	3.52	8,147	3,751
TOTAL <u>1/</u>	5,784						129,596		85,607	45,770 6/

1/ Total does not include 19,785 acres to remain in woodland and 6,336 acres dedicated woodland.  
 2/ Farmsteads, farm roads, was te and non-agricultural.  
 3/ Parenthetical amounts are duplicated acreages.  
 4/ Calculated from columns 3 and 6; rounded to nearest unit.  
 5/ Calculated from columns 3 and 10; rounded to nearest cent.  
 6/ Adjusted to eliminate negative net returns of \$1,641 for cotton and \$140 for corn.  
 7/ DRAINED: Cotton 5%; Corn 4%; Soybeans 11%; Oats (gr.) 6%; Oats (Sup. Past.) 6%; Soybeans (following oats) 6%; Permanent Pasture 15%.  
 8/ IRRIGATED (Drained): Cotton 3%; Corn 2%.

Basin: Red River Backwater Area

Project: Ouachita Lafourche

Ring Lovee

Reach: 1

State: Louisiana

SUMMARY - TABLE IV-B-2

(Zone for Drainage and Flood Control Calculations)  
COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on projected prices)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres <u>3/</u>	(4) Unit		(5) Production Per Acre		(6) Total		(7) Value of production Per Unit		(8) Total		(9) Cost of production Per Acre		(10) Total		(11) Net Return Dollars
			Unit	Production Per Acre	Total	Dollars	Total	Dollars	Per Unit	Total	Dollars	Total	Dollars	Per Acre	Total	Dollars	Return
ALL	Open Land	5,784															
	CROPS <u>6/</u> <u>7/</u>	5,205															
	Cotton	165	lbs.	508	83,900	Lint+Seed .30445	25,543	135.87	22,418	3,125							
	Corn	685	bu.	37	25,330	1.50	37,995	35.09	24,039	13,956							
	Soybeans	1,245	bu.	18	22,240	2.50	55,600	23.92	29,780	25,320							
	Oats (Grain)	1,983	bu.	31	61,110	.95	58,055	22.34	44,307	13,748							
	Oats(Sup.Past.)	(1,385)	lbs.beef	175	242,116	0.184	44,550	16.46	22,803	21,747							
	Soybeans Fol-																
	lowing Oats	(525)	bu.	15	7,975	2.50	19,938	21.74	11,413	8,525							
	Perm. Pasture	1,107	lbs.beef	222	245,835	0.184	45,233	20.99	23,233	22,000							
	Idle	20															
	Other <u>2/</u>	579															
	WOODLAND	0															
	TOTAL <u>1/</u>	5,784					286,914			177,993		108,921					

1/ Total does not include 19,785 acres to remain in woodland; and 6,336 acres dedicated woodland.

2/ Total Acres B-2 31,905 acres.

3/ Farmsteads, farm roads, waste and non-agricultural.

4/ Parenthetical amounts are duplicated acreages.

5/ Calculated from columns 3 and 6; rounded to nearest unit.

6/ Calculated from columns 3 and 10; rounded to nearest unit.

7/ DRAINED: Cotton 45%; Corn 40%; Soybeans 50%; Oats (gr.) 50%; Oats (Sup.Past.) 53%;

Soybeans (Fol. oats) 54%; Permanent Pasture 58%.

7/ IRRIGATED (Drained): Cotton 32%; Corn 17%.

Basin: Red River Backwater Area

Project: Ouachita Lafourche

Ring Levee

Reach: 1

State: Louisiana

SUMMARY - TABLE II C  
(Zone of No Project Benefit)  
COMPUTATION OF AGRICULTURAL PRODUCTION: EXISTING CONDITIONS

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(5) Production			(6)
			(4) Unit	Per acre	Total	
All	Open Land	142		<u>3/</u>		
	Crops	128				
	Cotton	15	lbs.	290	4,350	
	Corn	20	bu.	31	620	
	Soybeans	5	bu.	18	90	
	Oats (Grain)	35	bu.	27	960	
	Oats (Sup.Pas)	<u>2/</u> (18)	lbs.beef	178	3,200	
	Perm.Pasture	46	lbs.beef	147	6,780	
	Idle	7				
	Other <u>1/</u>	14				
	Woodland <u>4/</u>	27,519				
	TOTAL	27,661				

- 1/ Farmsteads, farm roads, waste and non-agricultural.  
2/ Parenthetical amounts are duplicated acreages.  
3/ Calculated from columns 3 and 6; rounded to nearest unit.  
4/ Woodland includes 500 acres of water.

Basin: Red River Backwater Area  
 Project: Ouachita Lafourche

Ring Levee

Reach: 1

State: Louisiana

SUMMARY - TABLE IIIC & IVC  
 (Zone of No Project Benefit)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
 AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1) Soil Unit	(2) Land use and crop distribution	(3) Acres	(4) Production		(5) Per Acre	(6) Total	(7) Value of production		(8) Total	(9) Cost of production		(10) Total	(11) Net Return
			Unit	Per Acre			Per Unit		Dollars	Per Acre		Dollars	Dollars
ALL	Open Land	202		<u>4/</u>									
	CROPS:	182											
	Cotton	5	lbs.	320		1,600	Lint+Seed .30445		487	<u>5/</u> 91.66		458	29
	Corn	4	bu.	32		128	1.50		192	29.50		118	74
	Soybeans	25	bu.	18		450	2.50		1,125	24.52		613	512
	Oats (Grain)	55	bu.	34		1,860	.95		1,767	23.85		1,312	455
	Oats (Sup. Past.)	(30)	lbs. beef	200		6,000	0.184		1,104	19.33		580	524
	Perm. Pasture	93	lbs. beef	163		15,160	0.184		2,789	15.33		1,426	1,363
	Idle	0											
	Other	20											
	WOODLAND	<u>6/</u> 0											
	TOTAL	<u>1/</u> 202							7,464			4,507	2,957

- 1/ Total does not include 27,459 acres of woodland, as no conversion and/or benefits are expected.
- 2/ Farmsteads, farm roads, waste and non-agricultural.
- 3/ Parenthetical amounts are duplicated acreages.
- 4/ Calculated from columns 3 and 6; rounded to nearest unit.
- 5/ Calculated from columns 3 and 10; rounded to nearest cent.
- 6/ Woodland includes 500 acres of water.

TABLE V  
SUMMARY BY SOIL MAPPING UNITS

Basin: Red River Backwater Area  
Project: Ouachita Lafourche Ring Levee  
Reach: 1  
State: Louisiana

Soil Unit	Acres	Future without project (Value of production in dollars)			Future with project (Value of production in dollars)			Difference in net value
		Gross	Cost	Net 1/ Zone A (Not subject to flooding)	Gross	Cost	Net 1/ Zone B 1, B 2, and C (Subject to Flooding)	
1	4,203	62,955	37,440	25,626	220,403	125,875	94,528	68,902
1a	1,204	13,496	8,146	5,548	50,812	28,151	22,661	17,113
2	322	10,923	6,783	4,145	22,525	13,045	9,480	5,335
10	1,727	21,645	13,146	8,559	81,784	48,822	32,962	24,403
10U	400	6,682	4,588	2,215	18,537	10,623	7,914	5,699
Subtotal 2/	7,856	115,701	70,103	46,093	394,061	226,516	167,545	121,452
1	5,461	113,418	68,388	Zone B 1, B 2, and C (Subject to Flooding) 45,526	274,124	157,363	116,761	71,235
1a	3,173	40,871	23,620	17,251	107,638	65,753	41,885	24,634
2	1,807	58,073	39,420	18,653	116,405	71,036	45,369	26,716
5	7,689	461,334	288,461	172,873	623,274	389,785	233,489	60,616
5U	742	20,885	13,956	6,929	44,388	26,590	17,798	10,869
9SU	421	17,876	11,062	6,814	23,426	13,415	10,011	3,197
10	2,035	40,283	27,604	14,696	73,345	47,990	25,355	10,659
10SU	65	2,710	1,737	973	3,114	1,836	1,278	305
10U	70	1,885	1,348	569	2,901	1,766	1,135	566
11	1,014	121,080	92,616	28,464	122,035	90,429	31,606	3,142
Subtotal 2/	22,477	878,415	568,212	312,748	1,390,650	865,963	524,687	211,939
TOTAL 2/	30,333	994,116	638,315	358,841	1,784,711	1,092,479	692,232	333,391

SUMMARY BY SOIL MAPPING UNITS

TABLE V

Basin: Red River Backwater Area  
Project: Ouachita Lafourche Ring Levee  
Reach: 1  
State: Louisiana

1/ Adjusted for negative net returns of \$495 in table III A.  
Adjusted for negative net returns of \$764 in table III B-1 and \$1,781 in table III B-2.

2/ Does not include 10,041 acres already drained; 8,530 acres expected to be drained, future without project; 1,554 acres open land and 971 acres of converted woodland not expected to participate in drainage program and 6,862 acres to remain in woodland and 4,520 acres not needing drainage. Total acres Zone A - 40,334.

Does not include 4,774 acres to remain in woodland and 1,368 acres dedicated to woodland in Zone B-1.  
Total acres Zone B-1 - 22,633.

Does not include 19,785 acres to remain in woodland and 6,336 acres dedicated woodland in Zone B-2.  
Total acres Zone B-2 - 31,905.

Does not include 27,459 acres of woodland in Zone C. Total Zone C - 27,661.

TABLE VI  
LAND CONVERSION COSTS WITH PROJECT

Basin: Red River Backwater Area  
Project: Ouachita Lafourche  
Reach: I  
State: Louisiana

Type of Conversion	Total Area	Cost of Clearing	Cost of Smoothing	Cost of Pasture Establishment	Total Cost
Woods to Other Land	912	54,720	0	0	54,720
Woods to General Cultivation	6,881	412,860	13,762	0	426,622
Woods to Pasture	1,318	79,080	0	36,904	115,984
Pasture to General Cultivation	2,397	0	4,794	0	4,794
General Cultivation to Pasture	5	0	0	140	140
Pasture to Improved Pasture	8,045	0	0	0	40,225
TOTAL FOR REACH					<u>642,485</u>
Annual Amortized Value (.05478)				12,899	35,195
Annual Maintenance of Converted Pasture	1,323			15,688	
Annual Maintenance of Improved Pasture	8,045			<u>28,587</u>	28,587

TABLE VII  
ANALYSIS OF FARM DRAINAGE SYSTEM COSTS

Basin: Red River Backwater Area  
Project: Ouachita Lafourche  
Ring Levee  
Reach: 1-Summary  
State: Louisiana

Zone A, B-1, & B-2

Soil Unit & Land Use	Area	Construction Cost		Contingency Cost	Total Cost Installation	Annual Equivalent Installation Cost 1/	Annual Maintenance Cost	Total Annual Cost
		Per acre	Total	Engineering cost				
1 & 1a-Cropland Pasture	Acres 5,109 4,127	Dollars 15.18 8.34	Dollars 77,555 34,419	Dollars 15,511 6,884	Dollars 7,756 3,442	Dollars 100,822 44,745	Dollars 13,056 5,794	Dollars 11,633 1,033
2 -Cropland Pasture	1,056 314	13.08 8.34	13,812 2,619	2,762 524	1,381 262	17,955 3,405	2,325 441	2,072 79
5 & 5a-Cropland Pasture	963 450	11.56 7.29	11,132 3,281	2,226 656	1,113 328	14,471 4,265	1,874 552	1,670 98
9SU -Cropland Pasture	59 17	11.43 8.73	674 148	135 30	67 15	876 193	113 25	101 4
10 -Cropland Pasture	1,723 768	15.03 7.92	25,897 6,083	5,179 1,217	2,590 608	33,666 7,908	4,360 1,024	3,884 183
10U -Cropland Pasture	211 184	13.03 8.53	2,749 1,570	550 314	275 157	3,574 2,041	463 264	412 47
TOTAL	14,981		179,939	35,988	17,994	233,921	30,291	21,216
1/ Amortized at 5% for 10 year period (0.12950)								
								51,507

Basin: Red River Backwater Area

Project: Ouachita Lafourche

Ring Levee

Reach: 1

State: Louisiana

TABLE IX  
SUMMARY OF ANNUAL NET PRODUCTION RETURNS AND ASSOCIATED COSTS

(1) Item	(2) Total	(3) Discounted amount
	<u>Dollars</u>	<u>Dollars</u>
1. Net return with project	689,275	
2. Net return without project	355,884	
3. Gross Benefit to project	333,391	264,296
4. Farm Drainage Cost		
a. Installation Cost	30,291	
b. Maintenance Cost	21,216	
c. Total Cost	51,507	40,832
5. Group Drainage Cost		
a. Installation Cost	0	
b. Maintenance Cost	0	
c. Total Cost	0	0
6. Conversion Cost		
a. Installation Cost	35,195	
b. Maintenance Cost	28,587	
c. Total Cost	63,782	50,563

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

TABLE I  
 PRESENT LAND USE

Page 1 of 2

Zone	Soil mapping unit	Open (Acres)	Wooded (Acres)	Total (Acres)
Zone A	8	262	108	370
Subtotal all soils		262	108	370
Zone B-1	1	236	441	677
	1a	89	2,300	2,389
	5	2,833	361	3,194
	8 <u>1/</u>	287	96	383
	8f <u>1/</u>	122	1,626	1,748
	9	2,788	317	3,105
	10	1,511	5,560	7,071
	10s <u>2/</u>	19	-	19
	10u <u>2/</u>	365	205	570
Subtotal all soils		8,250	10,906	19,156
Zone B-2	1	35	462	497
	1a	14	624	638
	2	50	7	57
	5	576	376	952
	8	57	485	542
	8f	-	334	334
	9	511	142	653
	10	865	2,516	3,381
	10u	142	113	255
	11	29	-	29
Subtotal all soils		2,279	5,059	7,338

BASIN: Red River Backwater area  
 PROJECT: Bushley Creek Area  
 REACH: 1  
 STATE: Louisiana

TABLE I (CON'TD)  
 PRESENT LAND USE

Page 2 of 2

Zone	Soil unit	Open Acres	Wooded Acres	Miscell- aneous Acres	Total Acres
Zone C	1	13	242	-	255
	1a	47	20,539	-	20,586
	2	34	81	-	115
	5	54	217	-	271
	8 3/	-	7	-	7
	8f3/	156	5,042	-	5,198
	10	101	722	-	823
Subtotal		405	26,850	-	27,255
Water		-	-	850	850
Total Zone C		405	26,850	850	28,105
REACH TOTAL-ALL SOILS		11,196	42,923	850	54,969

- 1/ Soil unit 8 and 8f combined as 8 in zone B-1.  
 2/ Soil unit 10s and 10u combined as 10u in zone B-1.  
 3/ Soil unit 8 and 8f combined as 8 in zone C.

BASIN: Red River Backwater Area  
 PROJECT: Bushley Creek Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY-TABLE IIA  
 (ZONE FOR DRAINAGE CALCULATIONS ONLY)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Land Use and Crop Distribution	(2) Acres	(3) Unit	(4) Production per acre. <u>3/</u>	(5) Total
	<u>1/</u>			
Open land	262			
Crops	236			
Cotton	40	lbs.	100	4,000
Corn	30	bu.	10	300
Soybeans	40	bu.	8	320
Oats (grain)	35	bu.	20	700
Oats (sup. past.)	(10)	lbs. beef	100	1,000
Perm. Pasture	86	lbs. beef	120	10,320
Idle	5			
Other <u>2/</u>	26			
Woodland	<u>108</u>			
TOTAL	370			

- 1/ Parenthetical amounts are duplicated acreages.  
2/ Farmsteads, farm roads, waste and non-agricultural.  
3/ Calculated from columns 2 and 5; rounded to the nearest unit.

BASIN: Red River Backwater Area  
 PROJECT: Bushley Creek Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE IIIA  
 (ZONE FOR DRAINAGE CALCULATIONS ONLY)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,  
 PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT  
 PROJECT (Based on projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop distribution	Acres	Production Unit	per acre	Total	Value of production Per unit	Total	Cost of production Per acre	Total	Net Return
Open Land	0								
Crops					lint+seed				
Cotton		lbs.			.30	45			
Corn		bu.			1.50				
Soybeans		bu.			2.50				
Oats (gr.)		bu.			.95				
Oats (sup. Past)		lbs. beef			.18	4			
Perm. Pasture		lbs. beef			.18	4			
Idle									
Other									
Woodland	0								
	0								
	0								

TOTAL 1/  
 1/ Does not include 315 acres expected to be drained, future without project; 26 acres open land not expected to participate in drainage program and 29 acres to remain in woodland.

BASIN: Red River Backwater Area

PROJECT: Bushley Creek Area

REACH: 1

STATE: Louisiana

SUMMARY - TABLE IVA

(ZONE FOR DRAINAGE CALCULATIONS ONLY)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION

PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS

WITH PROJECT (Based on projected prices).

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
land use and crop distribution	Acres	UNIT	Production PER ACRE	TOTAL	OF PRODUCTION Per unit	Total	Cost of production Per Acre	production Total	Net Return
					DOLLARS	DOLLARS	DOLLARS	DOLLARS	DOLLARS
Open land	0								
Crops									
Cotton		lbs.			lint+seed				
Corn		bu.			.30445				
Soybeans		bu.			1.50				
Oats (gr.)		bu.			2.50				
Oats (sup. past.)		bu.			.95				
Perm. Pasture		lbs. beef			.184				
Idle		lbs. beef			.184				
Other									
Woodland	0								
TOTAL	1/								

1/ Does not include 315 acres expected to be drained, future without project; 26 acres open land not expected to participate in drainage program and 29 acres to remain in woodland.

BASIN: Red River Backwater Area  
 PROJECT: Bushley Creek Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE IIB  
 (ZONE FOR DRAINAGE AND FLOOD CONTROL CALCULATIONS)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Land use and crop distribution	(2) Acres	(3) Production		(5) Total
		Unit	per acre	
	3/			
Open land	8,250		4/	
Crops	7,425			
Cotton	1,460	lbs.	265	387,350
Corn	1,420	bu.	23	31,960
Soybeans	1,415	bu.	17	24,595
Oats (gr.)	810	bu.	32	25,840
Oats (sup, past.)	(285)	lbs. beef	185	52,850
Perm. Pasture	2,123	lbs. beef	179	380,730
Idle	197			
Other 2/	825			
Woodland	19,734			
TOTAL 1/	18,984			

- 1/ Total does not include 172 acres of dedicated woodland.  
 2/ Farmsteads, farm roads, waste and non-agricultural.  
 3/ Parenthetical amounts are duplicated acreages.  
 4/ Calculated from columns 2 and 5; rounded to nearest unit.

SUMMARY - TABLE III B-1

(Zone for Drainage and Flood Control Calculations)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS, AND NET RETURN: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

Basin: Red River Backwater Area  
Project: Bushley Creek Area  
Reach: 1  
State: Louisiana

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop distribution	Acres	Production		Total	of production		of production		Net Return
		Unit	Per Acre		Per Unit	Total	Per acre	Total	
					Dollars	Dollars	Dollars	Dollars	Dollars
Open Land	10,130		5/				6/		
Crops:	9,117				Lint+Seed				
Cotton	610	Lbs.	429	261,650	.30445	79,659	114.70	69,970	10,112 2/
Corn	655	bu.	38	25,070	1.50	37,605	33.05	21,651	15,954
Soybeans	2,775	bu.	22	61,825	2.50	154,563	27.03	75,002	79,561
Oats (Grain)	2,710	bu.	35	95,600	.95	90,821	24.60	66,673	24,193
Oats(Sup.Past.)	(1,285)	lbs.beef	205	264,000	0.184	48,576	19.33	24,840	23,736
Soybeans Fol-									
lowing Oats	(420)	bu.	17	6,990	2.50	17,475	23.26	9,770	7,794 2/5
Perm.Pasture	2,129	lbs.beef	252	536,820	0.184	98,775	23.45	49,924	48,851
Idle	238								
Other 3/	1,013								
Woodland	3,179				5.68	18,056	3.27	10,395	7,661
TOTAL 1/	13,309					545,530		328,225	217,862

- 1/ Total does not include 5,675 acres to remain in woodland & 172 acres dedicated woodland.
- 2/ Adjusted to eliminate negative net return of \$557.
- 3/ Farmsteads, farm roads, waste and non-agricultural.
- 4/ Parenthetical amounts are duplicated acreages.
- 5/ Calculated from columns 2 & 5; rounded to the nearest unit.
- 6/ Calculated from columns 2 and 9; rounded to the nearest cent.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE IV B-1  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION  
 COSTS, AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on  
 projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop	Acres	Unit	Production Per Acre	Total	Per Unit	Value of production Total	Cost of production Per acre	Total	Net return
Distribution					Dollars	Dollars	Dollars	Dollars	Dollars
Open Land	13,309		5/				6/		
Crops:	11,978				Lint+Seed				
Cotton	525	lbs. lint	430	225,500	.30445	68,654	114.51	60,118	8,583 2/
Corn	2,015	bu.	35	70,770	1.50	106,155	31.27	63,001	43,154
Soybeans	2,675	bu.	22	58,600	2.50	146,500	26.94	72,059	74,441
Oats (Grain)	3,975	bu.	39	153,700	.95	146,015	26.31	104,585	41,430
Oats (Sup. Past.)	(3,040)	lbs. beef	219	667,100	0.184	122,746	20.90	63,550	59,196
Soybeans Fol-									
Lowing Oats	(1,025)	bu.	16	16,650	2.50	41,625	22.67	23,232	18,393
Perm. Pasture	2,741	lbs. beef	255	699,900	0.184	128,781	24.04	65,898	62,883
Idle	47								
Other	1,331								
Woodland	0								
TOTAL	13,309					760,476		452,443	308,080

- 1/ Total does not include 5,675 acres to remain in woodland, and does not include 172 acres of dedicated woodland.
- 2/ Adjusted to eliminate negative net return of \$47.
- 3/ Farmsteads, farm roads, waste and non-agricultural.
- 4/ Parenthetical amounts are duplicated acreages.
- 5/ Calculated from columns 2 & 5; rounded to nearest unit.
- 6/ Calculated from columns 2 & 9; rounded to nearest cent.

BASIN: Red River Backwater Area  
 PROJECT: Bushley Creek Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE IIB  
 (ZONE FOR DRAINAGE AND FLOOD CONTROL CALCULATIONS)  
 COMPUTATIONS OF AGRICULTURAL PRODUCTION

(1) Land use and crop distribution	(2) Acres	(4) Production		
		(3) Unit	Per acre	(5) Total
Open land	2,279			
Crops	2,051			
Cotton	469	lbs.	256	120,170
Corn	305	bu.	19	5,930
Soybeans	332	bu.	15	486
Oats (gr.)	390	bu.	26	10,140
Oats (sup. past.)	(130)	lbs. beef	161	20,900
Soybeans fol- lowing oats	(20)	bu.	13	260
Perm. Pasture	497	lbs. beef	157	78,190
Idle	58			
Other	228			
Woodland	4,887			
TOTAL	7,166			

1/ Total does not include 172 acres dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to nearest unit.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE III B-2  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION  
 COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on  
 projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop distribution	Acres	Unit	Production Per acre	Total	of production Per unit	Total	of production Per Acre	Total	Net return
					Dollars	Dollars	Dollars	Dollars	Dollars
Open Land	2,526								
Crops:	2,273		5/				6/		
Cotton	180	lbs. lint	247	44,400	Lint+Seed 30445	13,518	81.16	14,609	768 2/
Corn	255	bu.	22	5,590	1.50	8,385	23.77	6,061	2,324
Soybeans	501	bu.	16	8,183	2.50	20,458	22.94	11,493	8,965
Oats (Grain)	590	bu.	31	18,090	.95	17,186	22.26	13,132	4,054
Oats (Sup. Past.)	(240)	lb. beef	183	43,900	0.184	8,078	17.35	4,164	3,914
Soybeans Foll-									
lowing Oats	(40)	bu.	16	620	2.50	1,550	22.25	890	660
Perm. Pasture	614	lbs. beef	165	101,120	0.184	18,606	15.44	9,480	9,126
Idle	133								
Other 3/	253								
Woodland	1,422				5.68	8,077	3.27	4,650	3,427
TOTAL 1/	3,948					95,858		64,479	33,238

- 1/ Total does not include 3,218 acres to remain in woodland and 172 acres of dedicated woodland.
- 2/ Adjusted to eliminate negative net returns of \$1,859.
- 3/ Farmsteads, farm roads, waste and non-agricultural.
- 4/ Parenthetical amounts are duplicated acreages.
- 5/ Calculated from columns 2 & 5; rounded to nearest unit.
- 6/ Calculated from columns 2 & 9; rounded to nearest cent.

Basin: Red River Backwater Area

Project: Bushley Creek Area

Reach: 1

State: Louisiana

SUMMARY - TABLE IV B-2

(Zone for Drainage and Flood Control Calculations)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop distribution	Acres	Unit	Production Per Acre	Total	Value of production Per unit	Total	Cost of production Per Acre	Total	Net Return
			<u>4/</u>		Dollars	Dollars	<u>5/</u>	Dollars	Dollars
Open Land	3,948								
Crops:	3,553				Lint+Seed				
Cotton	100	lbs. lint	480	48,000	.30445	14,614	125.04	12,504	2,110
Corn	805	bu.	30	23,760	1.50	35,640	28.08	22,601	13,039
Soybeans	730	bu.	21	15,583	2.50	38,958	26.65	19,452	19,506
Oats (Grain)	1,365	bu.	37	51,170	.95	48,612	25.72	35,102	13,510
Oats (Sup. Past.)	(1,180)	lbs. beef	208	245,000	0.184	45,080	19.76	23,321	21,759
Soybeans Fallowing Oats	(335)	bu.	13	4,485	2.50	11,213	20.20	6,768	4,445
Perm. Pasture	553	lbs. beef	255	141,020	0.184	25,947	24.00	13,275	12,672
Idle	0								
Other	395								
Woodland	0								
TOTAL	<u>1/</u> 3,948					220,064		133,023	87,041

1/ Total does not include 3,218 acres to remain in woodland. Total does not include 172 acres of dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 & 5; rounded to nearest unit.

5/ Calculated from columns 2 & 9; rounded to nearest cent.

BASIN: Red River Backwater Area  
 PROJECT: Bushley Creek Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE IIC  
 (Zone of No Project Benefit)  
 COMPUTATION OF AGRICULTURAL PRODUCTION: EXISTING CONDITIONS

(1)	(2)	(3)	(4)	(5)
Land use and crop distribution	Acres		Production	
	3/	Unit	per acre	Total
Open land	405		4/	
Crops	365			
Cotton	20	lbs.	265	5,300
Corn	30	bu.	17	520
Soybeans	35	bu.	15	520
Oats	51	bu.	24	1,206
Oats (sup. past.)	(10)	lbs. beef	100	1,000
Perm. Pasture	223	lbs. beef	123	27,520
Idle	6			
Other 2/	40			
Woodland	0			
TOTAL 1/	405			

- 1/ Does not include 26,850 acres of woodland.  
 2/ Farmsteads, farm roads, waste and non-agricultural.  
 3/ Parenthetical amounts are duplicated acreages.  
 4/ Calculated from columns 2 and 5; rounded to the nearest unit.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE III C & IV C  
 (Zone of No Project Benefit)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION  
 COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on  
 projected prices)

Land use and crop distribution	(1) Acres	(2) Unit	(3) Production	(4) Per acre	(5) Total	(6) Value of production	(7) Total	(8) Cost of production	(9) Total	(10) Net Return
	3/			4/		Dollars	Dollars	Dollars	Dollars	Dollars
Open Land	405									
Crops:	365									
Soybeans	10	bu.	20		200	2.50	500	26.30	263	237
Oats(Grain)	20	bu.	36		720	.95	684	24.95	499	185
Oats(Sup.Past.)	(10)	lbs.beef	200		2,000	0.184	368	19.40	194	174
Perm.Pasture	319	lbs.beef	131		41,780	0.184	7,687	11.92	3,803	3,884
Idle	16									
Other	40									
Woodland	0									
TOTAL	1/ 405						9,239		4,759	4,480

- 1/ Total does not include 26,850 acres of woodland.
- 2/ Farmsteads, farm roads, waste and non-agricultural.
- 3/ Parenthetical amounts are duplicated acreages.
- 4/ Calculated from columns 2 & 5; rounded to nearest unit.
- 5/ Calculated from columns 2 & 9; rounded to nearest cent.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

TABLE V  
 SUMMARY BY SOIL MAPPING UNITS

Soil Unit	Acres	Future without project (Value of Production in dollars)		Future with project 1/ (Value of production in dollars)		Difference in Net Value
		Gross	Cost	Gross	Cost	

No Zone A Benefits

		Zones B-1, B-2 & C (Subject to flooding)				
1	785	14,861	8,788	6,073	42,363	25,005
1a	434	4,583	2,634	1,994	16,752	9,850
2	87	3,018	1,679	1,339	3,751	2,038
5	3,966	248,333	143,597	104,736	301,165	175,806
8	1,764	56,849	32,497	24,352	79,543	48,346
8f	34	193	111	82	1,686	986
9	3,624	213,006	132,027	80,979	235,006	137,823
10	6,223	88,100	62,299	28,172	270,001	167,399
10u	716	19,025	11,578	7,447	37,562	22,123
11	29	2,659	2,253	406	1,950	849
Total	3/ 17,662	650,627	397,463	255,580	989,779	590,225
						399,601
						144,021

- 1/ Includes Zone C which is assumed to be the same as future conditions without project.  
 2/ Adjusted to eliminate negative net returns.  
 3/ Total area of Zone B-1 reduced by 5,675 acres to remain in woodland and 172 acres of dedicated woodland.  
 Total Zone B-1 19,156. Total area of Zone B-2 reduced by 3,218 acres to remain in woodland and 172 acres of dedicated woodland. Total Zone B-2 7,338 acres. Total area of Zone C reduced by 26,850 acres of woodland. Total Zone C 27,255 acres.

TABLE VI  
LAND CONVERSION COSTS WITH PROJECT

BASIN: Red River Backwater area  
PROJECT: Bushley Creek Area  
REACH: 1  
STATE: Louisiana

Type of Conversion	Total Area ACRES	Cost of Clearing DOLLARS	Cost of Smoothing DOLLARS	Cost of Pasture Establishment DOLLARS	Total Cost DOLLARS
Woods to other land	460	27,600	-	-	27,600
Woods to general crops	2,982	178,920	5,964	-	184,884
Woods to pasture	1,159	69,540	2,318	33,032	104,890
Pasture to general crops	753	-	1,506	-	1,506
General crops to pasture	142	-	284	4,047	4,331
Pasture to improved pasture	1,993	-	-	-	4,484
TOTAL FOR REACH					327,695
Annual amortized value (.05478)					17,951
Annual Maintenance of converted pasture	1,301				
Annual Maintenance of improved pasture	1,993				14,639

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

TABLE VII  
 ANALYSIS OF FARM DRAINAGE SYSTEM COSTS

Zone A, B-1 & B-2		Construction Cost		Engineering Cost		Contin- gency Cost		Total Cost Instal- lation		Annual Equiva- lent Cost 1/ Year		Annual Mainte- nance Cost		Total Annual Cost	
Soil Unit and Land Use		Area	Per Acre	Total											
		<u>Acres</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
1,1a -	Cropland	682	15.18	10,353	2,071	1,035	13,459	1,743	1,553	3,296					
	Pasture	75	8.34	626	125	63	814	105	19	124					
2 -	Cropland	27	13.08	353	71	35	459	59	53	112					
	Pasture	6	8.34	50	10	5	65	8	2	10					
5,11 -	Cropland	419	11.56	4,844	969	484	6,297	815	727	1,542					
	Pasture	160	7.29	1,166	233	117	1,516	196	35	231					
8,8f -	Cropland	193	15.03	2,901	580	290	3,771	488	435	923					
	Pasture	51	7.92	404	81	40	525	68	12	80					
9 -	Cropland	358	13.03	4,665	933	467	6,065	785	700	1,485					
	Pasture	17	8.73	148	30	15	193	25	4	29					
10 -	Cropland	3,098	15.03	46,563	9,313	4,656	60,532	7,839	6,984	14,823					
	Pasture	1,057	7.92	8,371	1,674	837	10,882	1,409	251	1,660					
10u -	Cropland	379	13.03	4,938	988	494	6,420	831	741	1,572					
	Pasture	96	8.53	819	164	82	1,065	138	25	163					
Total		6,618		86,201	17,242	8,620	112,063	14,509	11,541	26,050					

1/ Amortized at 5% for 10 year period.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

TABLE VIII  
 ANALYSIS OF GROUP DRAINAGE NEED AND COSTS

Item	Unit	Amount	Unit Cost	Total Cost
			Dollars	Dollars
Excavation	a/Cu. Yd.	119,024	0.21	24,995
Shaping or Spreading Spoil	1/b/Cu. Yd.	167,767	0.15	25,165
Clearing Right-of-Way 1/				
Right-of-way easements	Miles	7.3	20.00	146
Crossings	Each	5	200.00	1,000
Grade Control Structures				
Water Gates	Each	6	40.00	240
Vegetative Plantings	Acres	32	13.00	416
Total Construction Cost				51,962
Engineering Cost				5,196
Contingencies & Legal				5,196
Total Installation Cost				62,354
Annual Equivalent - Installation Cost (Amortized for 20 years at $3\frac{1}{2}$ percent)				4,387
Annual Maintenance Cost				2,598
Total Annual Cost of required Group Facilities				6,985

- a/ Interior Drainage - Bushley Bayou to Sandy Lake. From: La. Dept. of Public Works  
 b/ Intermediate group drainage.  
 1/ These items included in excavation costs under normal contract procedure.

Basin: Red River Backwater Area  
 Project: Bushley Creek Area  
 Reach: 1  
 State: Louisiana

TABLE IX  
 SUMMARY OF ANNUAL NET PRODUCTION RETURNS  
 AND ASSOCIATED COSTS

(1) Item	(2) Total	(3) Discounted Amount
	<u>Dollars</u>	<u>Dollars</u>
1. Net return with project	395,121	
2. Net return without project	251,100	
3. Gross benefit to project	144,021	89,476
4. Farm drainage cost		
a. Installation Cost	14,509	
b. Maintenance Cost	11,541	
c. Total Cost	26,050	16,184
5. Group drainage cost		
a. Installation Cost	4,387	
b. Maintenance Cost	2,598	
c. Total Cost	6,985	5,800
6. Conversion Cost		
a. Installation Cost	17,951	
b. Maintenance Cost	14,639	
c. Total Cost	32,590	20,247

TABLE I  
PRESENT LAND USE

Basin: Red River Backwater Area  
Project: Sicily Island Loop Levee  
Reach: 1  
State: Louisiana

Page 1 of 2

Zone	Soil Mapping Unit		Open	Wooded	Total
			Acres	Acres	Acres
Zone A	1 BO	<u>1/</u>	553	346	899
	1u BO	<u>1/</u>	30	0	30
	2 BO		1,335	0	1,335
	2u BO	<u>2/</u>	110	0	110
	2su BO	<u>2/</u>	215	0	215
	5 BO	<u>3/</u>	85	0	85
	5u BO	<u>3/</u>	30	0	30
	5su BO	<u>3/</u>	30	0	30
	9s LT		18	0	18
	1 BOA		43	0	43
	5 BOA		294	0	294
Subtotal - all soils			2,743	346	3,089
Water					-
Urban					-
Zone Total			2,743	346	3,089
Zone B-1	1 BO		632	10,578	11,210
	1a BOA		296	4,750	5,046
	1u BO		111	871	982
	2 BO		591	240	831
	2u BO		86	245	331
	2su BO		891	227	1,118
	5 BO	<u>4/</u>	73	0	73
	5u BO	<u>4/</u>	397	275	672
	5su BO	<u>4/</u>	295	0	295
	8 LT		49	269	318
	9s LT		252	350	602
	11 BOA		345	31	376
	1 BOA		252	160	412
	2 BOA		163	221	384
	5 BOA		2,075	99	2,174
Subtotal - all soils			6,508	18,316	24,824
Water					-
Urban					-
Total - Zone B-1			6,508	18,316	24,824
Zone B-2	1 BO		6	5,407	5,413
	1a BOA		160	7,306	7,466
	1u BO	<u>5/</u>	172	344	516
	2 BO	<u>5/</u>	18	0	18
	2su BO		62	196	258
	8 LT		0	61	61
	11 BOA	<u>6/</u>	49	0	49
	1 BOA		142	243	385

TABLE 1  
PRESENT LAND USE

Basin: Red River Backwater Area  
Project: Sicily Island Loop Levee  
Reach: 1  
State: Louisiana

Page 2 of 2

Zone	Soil Mapping		Open Acres	Wooded Acres	Total Acres
	Unit				
Zone B-2	2 BOA		55	228	283
	5 BOA	6/	97	98	195
Subtotal - all soils			761	13,883	14,644
Water					-
Urban					-
Total - Zone B-2			761	13,883	14,644
Zone C	1 BO		0	1,705	1,705
	1a BOA		110	27,654	27,764
	1u BO		0	1,145	1,145
	2su BO		0	48	48
	8 LT		0	517	517
	11 BOA	7/	49	31	80
	1 BOA		178	37	215
	2 BOA		0	148	148
	5 BOA	7/	349	0	349
Subtotal - all soils			686	31,285	31,971
Water					1,605
Urban					-
Total - Zone C			686	31,285	33,576
Project Total			10,698	63,830	74,528
Water					1,605
Urban					-
GRAND TOTAL			10,698	63,830	76,133

- 1/ Soil Units 1 and 1u BO combined as 1.
- 2/ Soil Units 2u and 2su BO combined as 2u.
- 3/ Soil Units 5, 5u and 5su BO combined as 5.
- 4/ Soil Units 5, 5u and 5su BO combined as 5.
- 5/ Soil Units 1u and 2 combined as 1u.
- 6/ Soil Units 11 BOA and 5 BOA combined as 5.
- 7/ Soil Units 11 BOA and 5 BOA combined as 5.

BASIN: Red River Backwater Area  
 PROJECT: Tensas Cocodrie Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY • TABLE II A  
 (Zone for Drainage Calculations Only)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Land use and crop distribution	(2) Acres <u>3/</u>	(4) Production		(5) Total
		(3) Unit	Per Acre	
Open Land	2,394		<u>4/</u>	
Crops:	2,155			
Cotton	310	lbs. lint	338	104,750
Corn	305	bu.	29	8,860
Soybeans	410	bu.	18	7,480
Oats (Grain)	480	bu.	30	14,560
Oats (Sup. Past.)	(140)	lbs. beef	135	18,900
Soybeans fol-				
lowing oats	(40)	bu.	15	600
Perm. Pasture	596	lbs. beef	195	116,120
Idle	54			
Other <u>2/</u>	239			
Woodland	346			
TOTAL <u>1/</u>	2,740			

- 1/ Total does not include 349 acres already drained.  
 2/ Farmsteads, farm roads, waste and non-agricultural.  
 3/ Parenthetical amounts are duplicated acreages.  
 4/ Calculated from columns 2 and 5; rounded to the nearest unit.

Basin: Red River Backwater Area

SUMMARY - TABLE III A

Project: Sicily Island Loop Levee

(Zone for Drainage Calculations Only) COMPUTATION OF AGRICULTURAL

Reach: 1

PRODUCTION, PRODUCTION COSTS AND NET RETURNS: FUTURE CONDITIONS WITHOUT

State: Louisiana

PROJECT (Based on projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop distribution	Acres	Unit	Production Per Acre	Total	Per Unit	Value of production Total	Cost of production Per Acre	Total	Net Return
Open Land	1,657								
Crops:	1,491								
Cotton	20	lbs. lint	350	7,000	Lint+Seed .30445	2,131	97.93	1,959	172
Corn	240	bu.	30	7,160	1.50	10,740	28.27	6,784	3,956
Soybeans	340	bu.	18	6,280	2.50	15,700	24.78	8,426	7,274
Oats (Grain)	440	bu.	29	12,780	.95	12,141	21.44	9,435	2,706
Oats (Sup.Past.	(80)	lbs. beef	106	8,500	0.184	1,564	9.26	741	823
Soybeans fol- lowing oats	(20)	bu.	8	160	2.50	400	15.51	310	90
Perm.Pasture	395	lbs.beef	180	71,100	0.184	13,082	17.18	6,788	6,294
Idle	56								
Other	166								
Woodland	264			7.02		1,853	4.40	1,161	692
TOTAL	1,921					57,611		35,604	22,007

1/ Total does not include 288 acres already drained; 612 acres expected to be drained future without project; 174 acres open land not expected to participate in drainage program; 33 acres to remain in woodland. Total does not include 18 acres in soil unit 9s and 43 acres in soil unit 1 BOA already drained for which no table III A and IV A was needed.

2/ Farmsteads, farmroads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to the nearest unit.

5/ Calculated from columns 2 and 9; rounded to the nearest cent.

BASIN: Red River Backwater Area

PROJ. C: Sicily Island Loop Levee

REACH: 1

STATE: Louisiana

SUMMARY - TABLE IVA

(ZONE FOR DRAINAGE CALCULATIONS ONLY)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION, AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (BASED ON PROJECTED PRICES)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop distribution	Acres	Unit	Production		Value of production		Cost of Production		Net Return
			Per acre	Total	Per unit	Total	Per Acre	Total	
			3/	4/	5/	6/	7/	8/	
					DOLLARS	DOLLARS	DOLLARS	DOLLARS	DOLLARS
Open land	1,921								
Crops	1,729				lint+seed				
Cotton	45	lbs.	541	24,350	.30445	7,413	137.78	6,200	1,213
Corn	310	bu.	55	17,180	1.50	25,770	41.89	12,987	12,783
Soybeans	630	bu.	37	23,360	2.50	58,400	37.18	23,422	34,978
Oats (gr.)	510	bu.	61	31,360	.95	29,792	36.40	18,562	11,230
Oats (Sup. Past.)	(400)	lbs.							
Soybeans Following oats	(150)	bu.	253	101,200	.184	18,620	23.87	9,546	9,074
Perm. Pasture		lbs.	24	3,540	2.50	8,850	28.31	4,246	4,604
Idle	234	beef	367	85,780	.184	15,784	32.60	7,629	8,155
Other 2/	0								
Woodland	192								
TOTAL 1/	1,921					164,629		82,592	82,037

- 1/ Total does not include 288 acres already drained, 612 acres expected to be drained future without project, 174 acres open land not expected to participate in drainage program, 33 acres to remain in woodland. Total does not include 18 acres in soil unit 9s, 43 acres in soil unit 1 BOA already drained for which no Table IIIA and IVA was needed.
- 2/ Farmsteads, farm roads, waste and non-agricultural.
- 3/ Parenthetical amounts are duplicated acreages.
- 4/ Calculated from columns 2 and 5; rounded to the nearest unit.
- 5/ Calculated from columns 2 and 9; rounded to the nearest cent.

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

SUMMARY-TABLE IIB-1  
 (ZONE FOR DRAINAGE AND FLOOD CONTROL CALCULATIONS)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1)	(2)	(3)	(4)	(5)
Land use and crop distribution	Acres 3/	Unit	Production Per acre <sup>4</sup>	Total
Open land	6,508			
Crops	5,859			
Cotton	1,002	lbs.	389	390,110
Corn	600	bu.	35	20,860
Soybeans	1,439	bu.	23	33,655
Oats (gr.)	1,140	bu.	38	43,120
Oats (Sup. past.)	(330)	lbs. beef	191	62,900
Soybeans following oats	(90)	bu.	19	1,720
Perm. Pasture	1,620	lbs. beef	202	327,110
Idle	58			
Other <sup>2/</sup>	649			
Woodland	16,014			
TOTAL <sup>1/</sup>	22,522			

<sup>1/</sup> Total does not include 2,302 acres dedicated woodland.

<sup>2/</sup> Farmsteads, farm roads, waste and non-agricultural.

<sup>3/</sup> Parenthetical amounts are duplicated acreages.

<sup>4/</sup> Calculated from columns 2 and 5; rounded to nearest unit.

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE IIB-1  
 (ZONE FOR DRAINAGE AND FLOOD CONTROL CALCULATIONS)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,  
 PRODUCTION COSTS AND NET RETURNS: FUTURE CONDITIONS WITHOUT  
 PROJECT (BASED ON PROJECTED PRICES)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop distribution	Acres	Production Unit	per acre	Total	Value of production per unit	Total	Cost of Production per acre	Total Return	Net
					DOLLARS	DOLLARS	DOLLARS	DOLLARS	DOLLARS
Open land	7,556								
Crops	6,799								
Cotton	560	lbs.	486	272,400	1.3045	82,932	125.63	70,351	12,668
Corn	1,280	bu.	43	55,200	1.50	82,800	35.59	45,550	37,250
Soybeans	1,870	bu.	26	49,110	2.50	122,775	30.11	56,310	66,465
Oats (gr.)	1,378	bu.	43	59,544	.95	56,567	28.23	38,899	17,668
Oats (Sup. past.)	(790)	lbs. beef	219	171,150	.184	31,491	20.01	15,806	15,685
Soybeans Following									
Oats	(215)	bu.	20	4,385	2.50	10,963	26.05	5,600	5,363
Perm. Pasture	1,697	lbs. beef	218	370,590	.184	68,189	20.50	34,789	33,400
Idle	14								
Other	757								
Woodland	8,427				7.02	59,156	4.40	37,077	22,079
TOTAL	15,983					514,873		304,382	210,578

- 1/ Total does not include 6,539 acres to remain in woodland; 2,302 acres dedicated woodland.
- 2/ Adjusted to eliminate negative net returns of 87 dollars.
- 3/ Parenthetical amounts are duplicated acreages.
- 4/ Calculated from columns 2 and 5; rounded to nearest unit.
- 5/ Calculated from columns 2 and 9; rounded to nearest cent.
- 6/ Farmsteads, farm roads, waste and non-agricultural.

Basin: Red River Backwater Area  
 Project: Sicily Island Loop Levee  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE IV B-1  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION  
 COSTS, AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on  
 projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land Use and Crop Distribution	Acres	Unit	Production Per Acre	Total	Value of production Per Unit	Total	Cost of production Per Acre	Total	Net Return
			4/				5/		
Open Land	15,983				Dollars	Dollars	Dollars	Dollars	Dollars
Crops:	14,383				Lint+Seed				
Cotton	785	Lbs. Lint	477	374,350	.30445	113,972	123.70	97,105	16,867
Corn	2,370	Bu.	45	107,340	1.50	161,010	36.76	87,123	73,887
Soybeans	5,965	Bu.	29	174,340	2.50	435,850	32.11	191,555	244,295
Oats (Grain)	2,948	Bu.	50	146,944	.95	139,597	31.64	93,261	46,336
Oats (Sup. Past.)	(2,363)	Lbs. Beef	224	528,570	0.184	97,256	21.17	50,023	47,233
Soybeans Fol-									
lowing Oats	(875)	Bu.	20	17,830	2.50	44,576	26.00	22,748	21,828
Perm. Pasture	2,293	Lbs. Beef	290	665,980	0.184	122,542	26.69	61,209	61,333
Idle	22								
Other	1,600								
Woodland	0								
Total	15,983					1,114,803		603,024	511,779

- 1/ Total does not include 2,302 acres dedicated land; 6,539 acres to remain in woodland.
- 2/ Farmsteads, farm roads, waste and non-agricultural.
- 3/ Parenthetical amounts are duplicated acreages.
- 4/ Calculated from columns 2 and 5; rounded to nearest unit.
- 5/ Calculated from columns 2 and 9; rounded to the nearest cent.

Basin: Red River Backwater Area  
 Project: Sicily Island Loop Levee  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE II B-2  
 Zone for Drainage and Flood Control Calculations  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1)	(2)	(3)	(4)	(5)
Land Use and Crop	Acres		Production	
Distribution	<u>3/</u>	Unit	Per Acre	Total
Open Land	761		<u>4/</u>	
Crops:	684			
Cotton	56	Lbs. Lint	321	17,980
Corn	65	Bu.	34	2,200
Soybeans	105	Bu.	20	2,085
Oats (Grain)	55	Bu.	30	1,670
Oats (Sup. Past)	(30)	Lbs. Beef	150	4,500
Perm. Pasture	394	Lbs. Beef	226	88,970
Idle	9			
Other <u>2/</u>	77			
Woodland	9,269			
Total <u>1/</u>	<u>10,030</u>			

- 1/ Total does not include 4,553 acres of dedicated land and Soil Unit 8 LT consist of only 61 acres of dedicated land for which no Table II B-2 was needed.
- 2/ Farmstead, farm roads, waste and non-agricultural.
- 3/ Parenthetical amounts are duplicated acreages.
- 4/ Calculated from columns 2 and 5; rounded to nearest unit.

Basin: Red River Backwater Area  
 Project: Sicily Island Loop Levee  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE III B-2  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
 AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land Use and Crop Distribution	Acres	Unit	Production Per Acre	Total	Value of production Per Unit	Total	Cost of production Per Acre	Total	Net Return
Open Land	866		4/		Dollars	Dollars	Dollars	Dollars	Dollars
Crops:	779				Lint+Seed		5/		
Cotton	10	lbs. lint	370	3,700	.30445	1,126	102.10	1,021	105
Com	95	bu.	34	3,210	1.50	4,815	30.52	2,899	1,916
Soybeans	190	bu.	22	4,095	2.50	10,238	27.15	5,158	5,080
Oats(Grain)	190	bu.	36	6,800	.95	6,460	24.86	4,724	1,736
Oats(Sup.Past.)	(135)	lbs.beef	164	22,100	0.184	4,066	15.45	2,086	1,980
Soybeans Fol-									
lowing Oats	(10)	bu.	18	180	2.50	450	24.50	245	205
Perm.Pasture	292	lbs.beef	222	64,710	0.184	11,907	21.12	6,167	5,740
Idle	2								
Other	87								
Woodland	4,391								
Total	5,257					36,268		21,251	15,017
								43,551	31,779
Total	1/					75,330			

1/ Total does not include 4,773 acres to remain in woodland; and 4,614 acres dedicated woodland.  
 2/ Farmstead, farm roads, waste and non-agricultural.  
 3/ Parenthetical amounts are duplicated acreages.  
 4/ Calculated from columns 2 and 5; rounded to the nearest unit.  
 5/ Calculated from columns 2 and 9; rounded to the nearest cent.

BASIN: Red River Backwater Area

PROJECT: Stacy Island Loop Levee

REACH: 1

STATE: Louisiana

SUMMARY - TABLE IV-B-2

(Zone for Drainage and Flood Control Calculations)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on Projected Prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land Use and Crop Distribution	Acres	Unit	Production Per Acre	Total	Value of production Per Unit	Total	Cost of production Per Acre	Total	Return
Open Land	5,257		4/						
Crops:	4,731				Lint+Seed				
Cotton	25	lbs. lint	494	12,350	.30445	3,760	127.96	3,199	561
Corn	520	bu.	39	20,320	1.50	30,480	33.49	17,443	13,067
Soybeans	2,040	bu.	27	55,490	2.50	138,725	30.82	62,864	75,861
Oats (Grain)	1,348	bu.	47	63,740	.95	60,553	30.63	41,291	19,262
Oats (Sup. Past.)	(1,023)	lbs. beef	191	195,250	0.184	35,925	18.29	18,715	17,210
Soybeans Fol-									
lowing Oats	(435)	bu.	16	7,020	2.50	17,550	22.76	9,902	7,648
Perm. Pasture	798	lbs. beef	273	217,580	0.184	40,034	25.25	20,151	19,883
Idle	0								
Other	526								
Woodland	0								
Total	5,257					327,027		173,535	153,492

- 1/ Total does not include 4,773 acres to remain in woodland; and 4,614 acres dedicated woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to nearest unit.

5/ Calculated from columns 2 and 9; rounded to nearest cent.

Basin: Red River Backwater Area  
 Project: Sicily Island Loop Levee  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE II C  
 (Zone of No Project Benefit)  
 COMPUTATION OF AGRICULTURAL PRODUCTION: EXISTING CONDITIONS

(1)	(2)	(3)	(4)	(5)
Land Use and Crop	Acres		Production	
Distribution	<u>2/</u>	Unit	Per Acre	Total
			<u>3/</u>	
Open Land	686			
Crops:	617			
Cotton	15	lbs. lint	320	4,800
Corn	20	bu.	32	640
Soybeans	120	bu.	20	2,400
Oats (Grain)	75	bu.	36	2,700
Oats (Sup. Past.)	(35)	lbs. beef	200	7,000
Perm. Pasture	387	lbs. beef	194	75,160
Idle	0			
Other <u>1/</u>	69			
Woodland	31,285			
Total	31,971			

- 1/ Farmsteads, farm roads, waste and non-agricultural.  
2/ Parenthetical amounts are duplicated acreages.  
3/ Calculated from columns 2 and 5; rounded to nearest unit.

Basin: Red River Backwater Area  
Project: Sicily Island Loop Levee  
Reach: 1  
State: Louisiana

SUMMARY - TABLE III & IVC  
(Zone of No Project Benefit)  
COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,  
COSTS, AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based  
on projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land Use and Crop Distribution	Acres	Unit	Production Per Acre	Total	Value of production Per Unit	Total	Cost of production Per Acre	Total	Net Return
Open Land	686		4/		Dollars	Dollars	Dollars	Dollars	Dollars
Crops:	617						5/		
Corn	40	bu.	32	1,280	1.50	1,920	29.50	1,180	740
Soybeans	100	bu.	20	2,000	2.50	5,000	26.30	2,630	2,370
Oats (Grain)	50	bu.	36	1,800	.95	1,710	24.95	1,248	462
Oats (Sup. Past.)	(25)	lbs. beef	200	5,000	0.184	920	19.35	484	436
Perm. Pasture	427	lbs. beef	197	83,960	0.184	15,449	18.92	8,078	7,371
Idle	0								
Other	69								
Woodland	0								
TOTAL	686					24,999		13,620	11,379

1/ Total does not include 31,285 acres to remain in woodland, as no conversion and/or benefits are expected.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to the nearest unit.

5/ Calculated from columns 2 and 9; rounded to the nearest cent.

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

TABLE V  
 SUMMARY BY SOIL MAPPING UNITS

Soil Unit	Acres	Future Without Project			Future With Project 3/			Difference in Net Value
		(Value of production in Dollars) Gross	Cost	Net 2/	(Value of Production in Dollars) Gross	Cost	Net	
1 BO	780	16,162	10,080	6,082	57,521	29,627	27,894	21,812
2 BO	862	27,211	16,862	10,349	79,630	38,772	40,858	30,509
2uBO	279	14,238	8,662	5,576	27,478	14,193	13,285	7,709
Subtotal	1,921	57,611	35,604	22,007	164,629	82,592	82,037	60,030
Zone A								
1 B	10,729	99,582	61,197	38,385	700,867	372,026	328,841	290,456
1uBO	861	15,329	8,809	6,520	51,080	26,309	24,771	18,251
2 BO	812	28,477	16,396	12,081	72,057	37,242	34,815	22,734
2uBO	290	8,249	5,046	3,203	24,955	13,317	11,638	8,435
2subO	1,234	49,285	28,821	20,464	107,944	53,692	54,252	33,788
5B0	1,030	99,834	55,166	44,668	101,221	55,406	45,815	1,147
8LT	194	4,107	3,107	1,087	8,125	4,520	3,605	2,518
9sLT	537	26,978	14,679	12,299	33,587	18,950	14,637	2,338
1BOA	676	23,435	13,448	9,987	29,811	16,349	13,462	3,475
1aBOA	1,850	26,296	14,843	11,453	67,391	40,252	27,139	15,686
2 BOA	540	15,459	9,194	6,265	32,703	17,982	14,721	8,456
5 BOA	2,797	189,671	113,717	75,954	205,863	115,595	90,268	14,314
11BOA	376	28,500	17,130	11,370	31,225	18,539	12,686	1,316
Subtotal	21,926	615,202	361,553	253,736	1,466,829	790,179	676,650	422,914
Total 1/	23,847	672,813	397,157	275,743	1,631,458	872,771	758,687	482,944

BASIN: Red River Backwater Area  
PROJECT: Sicily Island Loop Levee  
REACH: 1  
STATE: Louisiana

TABLE V  
SUMMARY BY SOIL MAPPING UNITS  
(FOOTNOTES)

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1/ Zone A - Total does not include 288 acres already drained; 612 acres expected to be drained, future without project; 174 acres open land not expected to participate in drainage program; 33 acres to remain in woodland; 18 acres in soil unit 9s and 43 acres in soil unit 1 BOA already drained for which no Table IIIA and IVA was needed.

Zones B-1 and B-2 - Total does not include 11,312 acres to remain in woodland; 6,855 acres of dedicated woodland and soil unit 8 LT consists of 61 acres of dedicated woodland for which no table IIIB-2 and IVB-2 were made.

Zone C - Total does not include 31,285 acres to remain in woodland, as no conversion and/or benefits are expected. Soil Units 1BO, 1uBO, 2suBO, 8 LT and 2 BOA had no open land, and since no conversion with or without project was anticipated no Table IIIC and IVC was made.

2/ Adjusted to eliminate negative net returns of \$87 in Table IIIB-1.

3/ Includes Zone C which is assumed to be the same as future conditions without project.

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

TABLE VI  
 LAND CONVERSION COSTS WITH PROJECT

Zones A, B-1, & B-2					
Type of Conversion	Total Area	Cost of Clearing	Cost of Smoothing	Cost of Pasture Establishment	Total Cost
	(Acres)	(Dollars)	(Dollars)	(Dollars)	(Dollars)
Woods to Other	1,307	78,420			78,420
Woods to General Crops	9,875	592,500	19,750		612,250
Woods to Pasture	1,900	114,000			161,500
Pasture to General Crops	989		1,978	47,500	1,978
General Crops to Pasture	30			750	750
Pasture to Improved Pasture	1,395				8,370
Total for Reach					863,268
Annual amortized value (.05478)					47,290
Annual maintenance of pasture (new)	1,930			14,668	
Annual maintenance of Improved Pasture	1,395			4,464	
					19,132

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

TABLE VII  
 ANALYSIS OF FARM DRAINAGE SYSTEM COSTS

Zones A, B-1, B-2

Soil Unit and Land use	Area	Construction Cost		Engineering Cost	Conti-fency Cost	Total Cost	Annual Equiv. Install.	Annual Maintenance Cost	Total Annual Cost
		Per Acre	Total						
		(RES	DOLLARS	DOLLARS	DOLLARS	DOLLARS	DOLLARS	DOLLARS	DOLLARS
1, 1a-Cropland & 1u Pasture	8,198 1,817	15.18 8.34	124,446 15,154	24,889 3,031	12,445 1,515	161,780 19,700	20,951 2,551	18,667 455	39,618 3,006
2, 2u & 2su Cropland Pasture	2,761 341	13.08 8.34	36,114 2,844	7,223 569	3,611 284	46,948 3,697	6,080 479	5,417 85	11,497 564
5 Cropland Pasture	129 25	11.56 7.29	1,491 182	298 36	149 18	1,938 236	251 31	224 5	475 36
8 Cropland Pasture	34 86	15.03 7.92	511 681	102 136	51 68	664 865	86 115	77 20	163 135
Total	13,391		181,423	36,284	18,141	235,848	30,544	24,950	55,494

1/ Amortized at 5 percent for a 10 year period. (0.12950)

BASIN: Red River Backwater Area  
 PROJECT: Sicily Island Loop Levee  
 REACH: 1  
 STATE: Louisiana

TABLE IX  
 SUMMARY OF ANNUAL NET  
 PRODUCTION RETURNS AND ASSOCIATED COSTS

Item	Total	Discounted Amount <u>1/</u>
1. Net return with project	747,308	
2. Net return without project	264,364	
3. Gross benefit to project	482,944	382,854
4. Farm Drainage Cost		
a. Installation Cost	30,544	
b. Maintenance Cost	24,950	
c. Total Cost	55,494	43,993
5. Group Drainage Cost		
a. Installation Cost	0	
b. Maintenance Cost	0	
c. Total Cost	0	0
6. Conversion Cost		
a. Installation Cost	47,290	
b. Maintenance Cost	19,132	
c. Total Cost	66,422	52,656

1/ Discounted for a 10 year lag. (.79275)

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: 1  
 State: Louisiana

TABLE I  
 PRESENT LAND USE

Zone	Soil mapping unit	Open (Acres)	Wooded (Acres)	Total (Acres)
Zone B-1	1	967	22,864	23,831
	1u	49	10,262	10,311
	2 <u>1/</u>	350	928	1,278
	Subtotal - all soils	1,366	34,054	35,420
Water				-
Urban				-
Total Zone B-1		1,366	34,054	35,420
Zone B-2	1	1,574	45,220	46,794
	1u	12	23,752	23,764
	2 <u>1/</u>	356	1,295	1,651
	Subtotal - all soils	1,942	70,267	72,209
Water				-
Urban				-
Total Zone B-2		1,942	70,267	72,209
Zone C	1	-	28,159	28,159
	1u	-	1,039	1,039
	2 <u>1/</u>	-	74	74
	Subtotal - all soils	-	29,272	29,272
Water				5,400
Urban				-
Total Zone C		-	29,272	34,672
TOTAL AREA		3,308	133,593	142,301

1/ Soil unit 2, 2u, 5 and 11 combined as 2.

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: I  
 State: Louisiana

SUMMARY - TABLE II B-1  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1) Land use and crop distribution	(2) Acres <u>3/</u>	Production		
		Unit	Per Acre	Total
			<u>4/</u>	
Open Land	1,366			
Crops:	1,229			
Oats (Grain)	350	bu.	35	12,100
Oats (Sup. Past.)	(350)	lbs. beef	141	49,500
Perm. Pasture	879	lbs. beef	220	193,330
Idle	0			
Other <u>2/</u>	137			
Woodland	33,764			
TOTAL <u>1/</u>	35,130			

- 1/ Total does not include 290 acres dedicated woodland.  
2/ Farmsteads, farm roads, waste and non-agricultural.  
3/ Parenthetical amounts are duplicated acreages.  
4/ Calculated from columns 2 and 5; rounded to nearest unit.

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE III B-1  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS,  
 AND NET RETURNS: FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1) Land use and crop distribution	(2) Acres <u>3/</u>	(3) Production		(5) Total	(6) Value of production Per Unit		(8) Cost of production Per Acre		(9) Total		(10) Net Return Dollars
		Unit	Per Acre		Dollars	Total	Dollars	Per Acre	Dollars	Total	
Open Land	8,466		<u>4/</u>					<u>5/</u>			
Crops:	7,619										
Oats (Grain)	2,500	bu.	33	82,000	.95	77,900	23.34		58,339		19,561
Oats (Sup. Past.)	(2,500)	lbs. beef	129	322,000	0.184	59,248	11.69		29,237		30,011
Perm. Pasture	5,119	lbs. beef	216	1,104,930	0.184	203,308	30.76		157,442		45,866
Idle	0										
Other	847										
Woodland	20,034				7.89	158,068	4.63		92,757		65,311
TOTAL	<u>1/</u> 28,500					498,524			337,775		160,749

- 1/ Total does not include 290 acres dedicated woodland and 6,630 acres to remain in woodland.  
2/ Farmsteads, farm roads, waste and non-agricultural.  
3/ Parenthetical amounts are duplicated acreages.  
4/ Calculated from columns 2 and 5; rounded to the nearest unit.  
5/ Calculated from columns 2 and 9; rounded to the nearest cent.

Basin: Red River Backwater Area  
Project: Tensas Cocodrie Area  
Reach: 1  
State: Louisiana

SUMMARY - TABLE IV B-1

(Zone for Drainage and Flood Control Calculations)

COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT (Based on projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop distribution	Acres	Unit	Production Per Acre	Total	Value of production Per Unit	Total	Cost Per Acre	Total	Net Return
			<u>4/</u>		<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Open Land	28,500						<u>5/</u>		
Crops:	25,650								
Corn	50	bu.	58	2,900	1.50	4,350	43.16	2,158	2,192
Soybeans	3,250	bu.	31	99,750	2.50	249,375	33.11	107,610	141,765
Oats (Grain)	6,400	bu.	53	340,600	.95	323,570	33.26	212,888	110,682
Oats (Sup.Past.)	(6,400)	lbs.beef	214	1,368,000	0.184	251,712	20.72	132,588	119,124
Perm.Pasture	15,950	lbs.beef	331	5,282,640	0.184	972,005	44.98	717,383	254,622
Idle	0								
Other	2,850								
Woodland	0								
TOTAL	<u>1/</u> 28,500					1,801,012		1,172,627	628,385

1/ Total does not include 290 acres dedicated woodland and 6,630 acres to remain in woodland.

2/ Farmsteads, farm roads, waste and non-agricultural.

3/ Parenthetical amounts are duplicated acreages.

4/ Calculated from columns 2 and 5; rounded to the nearest unit.

5/ Calculated from columns 2 and 9; rounded to the nearest cent.

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE II B-2  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION

(1)	(2)	(3)	(4)	(5)
Land Use and Crop	Acres		Production	
Distribution	<u>3/</u>	Unit	Per Acre	Total
			<u>4/</u>	
Open Land	1,942			
Crops:	1,748			
Oats (Grain)	700	bu.	23	16,200
Oats (Sup.Past.)	(600)	lbs.beef	80	48,000
Perm.Pasture	1,048	lbs.beef	161	168,420
Idle	0			
Other <u>2/</u>	194			
Woodland	69,522			
TOTAL <u>1/</u>	71,464			

- 1/ Total does not include 745 acres dedicated woodland.  
2/ Farmsteads, farm roads, waste and non-agricultural.  
3/ Parenthetical amounts are duplicated acreages.  
4/ Calculated from columns 2 and 5; rounded to the nearest unit.

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: 1  
 State: Louisiana

SUMMARY - TABLE III B-2  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION, PRODUCTION COSTS AND NET RETURNS; FUTURE CONDITIONS WITHOUT PROJECT (Based on projected prices)

(1) Land use and crop distribution	(2) Acres	(3) Unit	(4) Production Per Acre	(5) Total	(6) Value of production Per Unit	(7) Total	(8) Cost of production Per Acre	(9) Total	(10) Net Return
					Dollars	Dollars	Dollars	Dollars	Dollars
Open Land	3,442								
Crops	3,098								
Oats (Grain)	400	bu.	28	11,300	.95	10,735	21.04	8,416	2,319
Oats (Sup. Past.)	(400)	lbs. beef	125	50,000	0.184	9,200	11.29	4,514	4,686
Perm. Pasture	2,698	lbs. beef	168	454,500	0.184	83,628	23.62	63,727	19,901
Idle	0								
Other	344								
Woodland	44,334				7.89	349,794	4.63	205,265	144,529
TOTAL	47,776					453,357		281,922	171,435

- 1/ Total does not include 745 acres dedicated woodland and 23,688 acres to remain in woodland.
- 2/ Farmsteads, farm roads, waste and non-agricultural.
- 3/ Parenthetical amounts are duplicated acreages.
- 4/ Calculated from columns 2 and 5; rounded to the nearest unit.
- 5/ Calculated from columns 2 and 9; rounded to the nearest cent.

BASIN: Red River Backwater Area  
 PROJECT: Tensas Cocodrie Area  
 REACH: 1  
 STATE: Louisiana

SUMMARY - TABLE IVB-2  
 (Zone for Drainage and Flood Control Calculations)  
 COMPUTATION OF AGRICULTURAL PRODUCTION, VALUE OF PRODUCTION,  
 PRODUCTION COSTS, AND NET RETURNS: FUTURE CONDITIONS WITH PROJECT  
 (Based on projected prices)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Land use and crop distribution	Acres	Unit	Production Per acre	Total	of production Per unit	Total	of Production Per acre	Total	Net Return
Open land	47,776								
Crops	42,998								
Corn	5/ 4,650	bu.	45	208,100	1.50	312,150	36.68	170,554	141,596
Soybeans	7,800	bu.	30	236,700	2.50	591,750	32.89	256,545	335,205
Oats (grain)	7,600	bu.	52	398,800	.95	378,860	32.98	250,651	128,209
Oats (sup. Past)	(7,600)	1bsf	212	1,614,000	0.184	296,976	20.61	156,617	140,359
Permanent Pasture	22,948	beef	331	7,594,860	1.184	1397,454	44.95	1,031,456	365,998
Other 2/	4,778								
Woodland	0								
Total 1/	47,776					2,977,190		1,865,823	1,111,367

- 1/ Total does not include 745 acres dedicated woodland and 23,688 acres to remain in woodland.
- 2/ Farmsteads, farm roads, waste and non-agricultural.
- 3/ Calculated from columns 2 and 5; rounded to the nearest unit.
- 4/ Calculated from columns 2 and 9; rounded to the nearest cent.
- 5/ Parenthetical amounts are duplicated acreages.

BASIN: Red River Backwater Area

PROJECT: Tensas Cocodrie Area

REACH: 1

STATE: Louisiana

SUMMARY-TABLE IIC  
(Zone of No Project Benefit)  
COMPUTATION OF AGRICULTURAL PRODUCTION  
EXISTING CONDITIONS

(1)	(2)	(3)	(4)	(5)
Land use and crop distribution	Acres	Production Unit	Per acre	Total
Open land	0			
Crops	0			
Woodland	29,272			
Total <u>1/</u>	29,272			

1/ Since no conversion and/or benefits are expected, the 29,272 acres will remain in woodland and no table IIIC and IVC was made.

BASIN: Red River Backwater Area  
 PROJECT: Tensas Coccodrie Area  
 REACH: 1  
 STATE: Louisiana

TABLE V  
 SUMMARY BY SOIL MAPPING UNITS

Soil Unit	Acres	Future without Project (Value of production in dollars)			Future with Project (Value of production in dollars)			Difference in Net Value
		Gross	Cost	Net	Gross	Cost	Net	
Zones B-1 and B-2								
1	49,945	614,984	402,595	212,389	3,091,044	1,979,939	1,111,105	898,716
1u	23,847	275,822	175,941	99,881	1,480,870	944,870	536,000	436,119
2	2,484	61,075	41,161	19,914	206,288	113,641	92,647	72,733
Total 1/	76,276	951,881	619,697	332,184	4,778,202	3,038,450	1,739,752	1,407,568

1/ Total does not include 290 acres dedicated woodland and 6,630 acres to remain in woodland in Zone B-1.

Total does not include 745 acres dedicated woodland and 23,688 acres to remain in woodland in Zone B-2.

BASIN: Red River Backwater Area  
 PROJECT: Tensas Cocodrie Area  
 REACH: 1  
 STATE: Louisiana  
 Zone B-1

TABLE VI  
LAND CONVERSION COST WITH PROJECT

Type of Conversion	Total Acres	Cost of Clearing DOLLARS	Cost of Smoothing DOLLARS	Total Cost DOLLARS
Woodland to Other Land	2,003	120,180	-	120,180
Woodland to Crops	7,200	432,000	36,000	468,000
Woodland to Pasture	10,831	649,860	21,662	<u>671,522</u>
Total for Zone B-1				1,259,702
Amortization Value (.05478)				69,006

BASIN: Red River Backwater Area  
 PROJECT: Texas Coccodrie Area  
 REACH: 1  
 STATE: Louisiana  
 Zone B-2

TABLE VI  
LAND CONVERSION WITH PROJECT

Type of Conversion	Total Acres	Cost of Clearing DOLLARS	Cost of Smoothing DOLLARS	Total Cost DOLLARS
Woodland to Other land	4,433	265,980		265,980
Woodland to Crops	19,651	1,179,060	98,255	1,277,315
Woodland to Pasture	20,250	1,215,000	40,500	<u>1,255,500</u>
Total for Zone B-2				2,798,795
Amortization Value (.05478)				153,318

Basin: Red River Backwater Area  
 Project: Tensas Cocodrie Area  
 Reach: 1  
 State: Louisiana

TABLE VII  
 ANALYSIS OF FARM DRAINAGE SYSTEM COSTS

Soil Unit & Land Use	Area	Construction Cost Per Acre	Total Construction Cost	Engineering Cost	Contingency Cost	Total Cost Installation	Annual Equiv. Install. Cost $\frac{1}{1}$	Annual Maintenance Cost	Total Annual Cost
<b>Zone B-1</b>									
1 - Cropland Pasture	5,316 8,778	15.18 8.34	80,697 73,209	16,139 14,642	8,070 7,321	104,906 95,172	13,585 12,325	12,105 2,196	25,690 14,521
1u- Cropland Pasture	2,096 4,108	15.18 8.34	31,817 34,261	6,363 6,852	3,182 3,426	41,362 44,539	5,356 5,768	4,773 1,028	10,129 6,796
2 - Cropland Pasture	554 253	13.08 8.34	7,246 2,110	1,449 422	725 211	9,420 2,743	1,220 355	1,087 63	2,307 418
Sub-total	21,105		229,340	45,867	22,935	298,142	38,609	21,252	59,861
<b>Zone B-2</b>									
1 - Cropland Pasture	11,205 13,640	15.18 8.34	170,092 113,758	34,018 22,752	17,009 11,376	221,119 147,886	28,635 19,151	25,514 3,413	54,149 22,564
1u- Cropland Pasture	6,020 6,617	15.18 8.34	91,384 55,186	18,277 11,037	9,138 5,519	118,799 71,742	15,384 9,291	13,708 1,656	29,092 10,947
2 - Cropland Pasture	781 337	13.08 8.34	10,215 2,811	2,043 562	1,022 281	13,280 3,654	1,720 473	1,532 84	3,252 557
Sub-total	38,600		443,446	88,689	44,345	576,480	74,654	45,907	120,561
TOTAL	59,705		672,786	134,556	67,280	874,622	113,263	67,159	180,422

1/ Installation cost amortized at 5% for 10 years (0.12950)

BASIN: Red River Backwater Area

PROJECT: Tensas Cocodrie Area

REACH: 1

STATE: Louisiana

TABLE VIII  
ANALYSIS OF GROUP DRAINAGE NEEDS AND COSTS

Item	Unit	Amount	Unit Cost	Total Cost
			DOLLARS	DOLLARS
Excavation	cu. yds.	451,500	0.15	67,725
Right-of-way easements	mi.	21	25.00	525
Crossings	each	5	200.00	1,000
Water Gates	each	8	40.00	320
Vegetation Planting	acres	50	15.00	750
Total Construction Cost				70,320
Engineering Cost				7,032
Contingencies and Legal				7,032
Total Installation Cost				84,384
Annual Equivalent-Installation Cost (Amortized at $3\frac{1}{2}\%$ for 20 years)				5,937
Annual Maintenance cost				<u>3,516</u>
Total annua.. cost				\$9,453

BASIN: Red River Backwater Area  
 PROJECT: Tensas Coccodrle Area  
 REACH: 1  
 STATE: Louisiana

TABLE IX  
 SUMMARY OF ANNUAL NET PRODUCTION RETURNS  
 AND ASSOCIATED COSTS  
 Zone B-1 Zone B-2

Item	Total	Discounted Amount 1/	Total	Discounted Amount 1/
1. Net Return with project	628,385		1,111,367	
2. Net Return without project	160,749		171,435	
3. Gross benefit to project	467,636	290,528	939,932	583,952
4. Farm Drainage Cost				
a. Installation Cost	38,609		74,654	
b. Maintenance Cost	21,252		45,907	
c. Total Cost	59,861	37,190	120,561	74,901
5. Group Drainage Cost				
a. Installation Cost	0		5,937	
b. Maintenance cost	0		3,516	
c. Total Cost	0		9,453	6,407
6. Conversion Cost				
a. Installation Cost	69,006	42,871	153,318	95,252
7. Gross benefits to authorized and proposed projects		290,528		583,952
8. Less Associated costs		80,061		176,560
9. Net return to authorized and proposed projects		210,467		407,392
10. Net return times 2C% attributable to project in Zone B-1 and 100% in Zone B-2		42,093		407,485
11. Total net benefit to proposed projects Zones B-1 and B-2.				449,485

1/ Item 3, 4, and 6 discounted for a 20 year lag at 5%. (.62127)  
 Item 5 discounted for a 20 year lag at 3 1/2%. (.67774)



